Appendix B

Copy of Timber Harvest Plan

As Submitted to CALFIRE

SECTION I – GENERAL INFORMATION
(PART OF PLAN))
"Brooks Mill THP"

FOR ADMIN. USE ONLY
Amendments-date & S or M

1. _____ 7. _____
2. _____ 8. _____
3. _____ 9. _____
4. _____ 10. _____
5. _____ 11. _____.
6. _____ 12. _____.

TIMBER HARVESTING PLAN

FOR ADMIN. USE ONLY

STATE OF CALIFORNIA
DEPARTMENT OF FORESTRY THP No. _____.
AND FIRE PROTECTION
RM-63 (02-03) Dates Recd _____.

THP Name: **Brooks Mill** Date Filed _____.

(In the CDF FPS, this is "THP Description")

Date Approved _____.

If this is a Modified THP, check box: [ ] Date Expires _____.

Extensions 1) [ ] 2) [ ]

This Timber Harvesting Plan (THP) form, when properly completed, is designed to comply with the Forest Practice Act (FPA) and Board of Forestry and Fire Protection rules. See separate instructions for information on completing this form. NOTE: The form must be printed legibly in ink or typewritten. The THP is divided into six sections. If more space is necessary to answer a question, continue the answer at the end of the appropriate section of your THP. If writing an electronic version, insert additional space for your answer. Please distinguish answers from questions by *font change*, **bold** or underline.

SECTION I - GENERAL INFORMATION

This THP conforms to my/our plan and upon approval, I/we agree to conduct harvesting in accordance therewith. Consent is hereby given to the Director of Forestry and Fire Protection, and his or her agents and employees, to enter the premises to inspect timber operations for compliance with the Forest Practice Act and Forest Practice Rules.

1. TIMBER OWNER(S) OF RECORD: Name: Rodney Flournoy
   Address: P.O. Box 1
   City: Likely State: CA Zip: 96116 Phone: 530-233-4777

   Signature: _____ Date: _____

NOTE: The timber owner is responsible for payment of a yield tax. Timber Yield Tax information may be obtained at the Timber Tax Section, MIC: 60, State Board of Equalization, P.O. Box 942879, Sacramento, California 94279-0060; phone 1-800-400-7115; BOE Web Page at http:// www.boe.ca.gov.

2. TIMBERLAND OWNER(S) OF RECORD: Name: Same as Above

   Address: _____.

   City: _____ State: _____ Zip: _____ Phone: _____

   Signature: _____ Date: _____.

3. LICENSED TIMBER OPERATOR(S):
   Name: Unknown at this Time Lic. No. _____
   (If unknown, so state. You must notify CDF of LTO prior to start of operations)
   Address: _____

   City: _____ State: _____ Zip: _____ Phone: _____

   Signature: _____ Date: _____.

SECTION I – GENERAL INFORMATION
(PART OF PLAN))
"Brooks Mill THP"

4. PLAN SUBMITTER(S): Name: Rodney Flournoy
Address: P.O. Box 1
City: Likely State: CA Zip: 96116 Phone: 530-233-4777

(Submitter must be from 1, 2, or 3 above. He/she must sign below. Ref. Title 14 CCR 1032.7 (a))

Signature: _____ Date: _____

5. a. List person to contact on-site who is responsible for the conduct of the operation. If unknown, so state and name must be provided for inclusion in the THP prior to start of timber operations.

Name: Unknown at this time

Address: _____

City: _____ State: _____ Zip: _____ Phone: _____.

b. [X] Yes [ ] No Will the timber operator be employed for the construction and maintenance of roads and landings during conduct of timber operations? If no, who is responsible?

c. Who is responsible for erosion control maintenance after timber operations have ceased and until certification of the Work Completion Report? If not the LTO, then a written agreement must be provided per 14 CCR 1050 (c).

The LTO is responsible for erosion control maintenance after timber operations have ceased and until certification of the Work Completion Report. As stated in Item #3, the LTO for this THP is unknown at this time. The LTO will be amended into the plan prior to operations.

6. a. Expected date of commencement of timber operations:

[X] date of THP conformance, or [ ] _____(date)

The RPF shall be responsible for notifying CDF of commencement of timber operations. Each calendar year, within 15 days before, and not later than the day of the start up of timber operations, the RPF shall notify the CDF Forest Practice Office Technician at the following address and/or telephone number:

CAL FIRE
Lassen-Modoc Unit
697-345 Highway 36
Susanville, CA 96130
(530) 257-4171

b. Expected date of completion of timber operations:

[X] 3 years from date of THP conformance, or [ ] _____(date)

SECTION I – GENERAL INFORMATION
(PART OF PLAN))
"Brooks Mill THP"

7. The timber operation will occur within the:

[ ] COAST FOREST DISTRICT
[ ] Southern Subdistrict of the Coast F. D.
[ ] SOUTHERN FOREST DISTRICT
[ ] High use subdistrict of the Southern F. D.
[X] NORTHERN FOREST DISTRICT
[ ] The Tahoe Regional Planning Authority Jurisdiction
[ ] A County with Special Regulations, identify:
[ ] Coastal Zone, no Special Treatment Area
[ ] Special Treatment Area(s), type and identify:
[ ] Other

8. Location of the timber operation by legal description:
Base and Meridian: [X] Mount Diablo [ ] Humboldt [ ] San Bernardino

Section	Township	Range	Acreage	County	Assessor's Parcel Number (Optional)
24	40N	14E	166	Modoc	029-04-11
25	40N	14E	97	Modoc	029-06-08
36	40N	14E	13	Modoc	029-06-19

TOTAL ACREAGE **276** (Logging Area Only)

Planning Watershed: CALWATER Version, Identification Number, and Name:

V 2.2- Upper Mill Creek (5526.530201) and Lower Mill Creek (5526.530204)

7.5 minute quadrangle maps: Soup Creek, California (1993)

9. [X] Yes [ ] No Has a Timberland Conversion been submitted? If yes, list expected approval date or permit number and expiration date if already approved.

Expected Approval Date: June 1, 2010

10. [ ] Yes [X] No Is there an approved Sustained Yield Plan for this property? Number ____ Date app. _____

[ ] Yes [X] No Has a Sustained Yield Plan been submitted but not approved? Number ____ Date sub. _____

11. [ ] Yes [X] No Is there a THP or NTMP on file with CDF for any portion of the plan area for which a Report of Satisfactory Stocking has not been issued by CDF? If yes, identify the THP or NTMP number(s):

[ ] Yes [X] No Is there a contiguous even aged unit with regeneration less than five years old or less than five feet tall? If yes, explain. Ref. Title 14 CCR 913.1 (933.1, 953.1) (a)(4).

SECTION I – GENERAL INFORMATION
(PART OF PLAN))
"Brooks Mill THP"

12. [X] Yes [ ] No Is a Notice of Intent necessary for this THP?
[X] Yes [ ] No If yes, was the Notice of Intent posted as required by 14 CCR 1032.7 (g)?

13. RPF preparing the THP:

Name: Michael J. Goodner RPF Number: 2178

Address: P O Box 38

City: Burney State: CA Zip: 96013 Phone: 530-335-5486

a. [X] Yes [ ] No I have notified the plan submitter(s), in writing, of their responsibilities pursuant to 14 CCR 1035 of the Forest Practice Rules.

[X] Yes [ ] No I have notified the timber owner and the timberland owner of their responsibilities for compliance with the Forest Practice Act and rules, specifically the stocking requirements of the rules and the maintenance of erosion control structures of the rules.

b. [X] Yes [ ] No I will provide the timber operator with a copy of the portions of the approved THP as listed in 14 CCR 1035 (f). If "no", who will provide the LTO a copy of the approved THP?

c. I have the following authority and responsibilities for preparation and administration of the THP and timber operation. (Include both work completed and work remaining to be done):

I am responsible for writing the Plan, marking the harvest and or leave trees, attending the PHI, administration of timber operations associated, submitting any changes to the plan, and will be the RPF available to provide professional advice throughout timber operations.

Property line boundaries are the responsibility of the landowner.

d. Additional required work requiring an RPF, which I do not have the authority or responsibility to perform:

None.

e. After considering the rules of the Board of Forestry and Fire Protection and the mitigation measures incorporated in this THP, I have determined that the timber operation:

[ ] will have a significant adverse impact on the environment (Statement of reasons for overriding considerations contained in Section III).

[X] will not have a significant adverse impact on the environment.

Registered Professional Forester: I certify that I, or my supervised designee, personally inspected the THP area, and this plan complies with the Forest Practice Act, the Forest Practice Rules and the Professional Foresters Law. If this is a Modified THP, I also, certify that: 1) the conditions or facts stated in 14 CCR 1051 (a) (1) - (16) exist on the THP area at the time of submission, preparation, mitigation, and analysis of the THP and no identified potential significant effects remain undisclosed; and 2) I, or my supervised designee, will meet with the LTO at the THP site, before timber operations commence, to review and discuss the contents and implementation of the Modified THP.

SECTION I – GENERAL INFORMATION
(PART OF PLAN))
"Brooks Mill THP"

Signature:_____ Date: _____

SECTION II - PLAN OF TIMBER OPERATIONS

NOTE: If a provision of this THP is proposed that is different than the standard rule, the explanation and justification should normally be included in Section III unless it is clearer and better understood as part of Section II.

14. a. Check the Silvicultural methods or treatments allowed by the rules that are to be applied under this THP. Specify the option chosen to demonstrate Maximum Sustained Production (MSP) according to 14 CCR 913 (933, 953) .11. If more than one method or treatment will be used show boundaries on map and list approximate acreage for each.

[ ] Clear-cutting ____ ac [ ] Shelterwood Prep. Step _____ ac. [ ] Seed Tree Seed Step ____ ac.

[ ] Shelterwood Seed Step ___ ac. [ ] Seed Tree Removal Step __ ac.

[ ] Shelterwood Removal Step ___ ac.

[X] Selection __**17**___ ac. [ ] Group Selection _____ ac. [ ] Transition ac.

[ ] Commercial Thinning ____ac. [ ] Road Right of Way_____ ac. [ ] Sanitation Salvage _____ ac,

[ ] Special Treatment Area ___ac. [ ] Rehab. of Understocked Area _____ ac. [ ] Fuelbreak _____ ac.

[ ] Alternative ac. [X] Conversion __**259**___ ac. [ ] Non-Timberland Area _____ac.

Total acreage: __**276**__ac Explain if total is different from that in 8. MSP option chosen: (a) [ ] (b) [ ] (c) [X]

b. If Selection, Group Selection, Commercial Thinning, Sanitation Salvage or Alternative methods are selected the post harvest stocking levels (differentiated by site if applicable) must be stated. Note mapping requirements of 1034 (x) (12).

Selection Unit- Site IV, will meet or exceed the post harvest stocking level 933.2(a)(2)(A)(3)&(4)- 50 square feet of basal area per acre of which at least 12 square feet of basal area per acre will be from seed trees 18 inch dbh or larger. The seed trees must be of full crown, capable of seed production and representative of the best phenotypes available in the pre-harvest stand. Stocking levels, as stated, will be met at the completion of operations.

Conversion Unit- The Conversion prescription does not require any post harvest stocking. But in consultation with DFG, 25 square feet of basal area per acre averaged over any contiguous 5 acres, with representative trees from different age classes will be retained.

c. [ ] Yes [X] No Will evenage regeneration step units be larger than those specified in the rules (20 acres tractor, 30 acres cable)? If yes, provide substantial evidence that the THP contains measures to accomplish any of subsections (A) - (E) of 14 CCR 933.1 (a) (2) in Section III of the THP. List below any instructions to the LTO necessary to meet (A) - (E) not found elsewhere in the THP. These units must be designated on map and listed by size.

d. Trees to be harvested or retained must be marked by or marked under the supervision of the RPF. Specify how the trees will be marked and whether harvested or retained.

All saw-log sized **leave trees** in the selection and conversion units will be marked with **orange marking paint.** Each **leave** tree will be marked at approximately 4.5 feet height and with a painted butt mark near ground level.

All saw-log sized trees within the WLPZ of Soup Creek designated for harvest shall be marked with **blue marking paint** at approximately 4.5 feet height and with a painted butt mark near ground level.

[ ] Yes [X] No Is a waiver of marking by the RPF requirement requested? If yes, how will LTO determine which trees will be harvested or retained? If yes and more than one silvicultural method or Group Selection is to be used, how will LTO determine boundaries of different methods or groups?

e. Forest products to be harvested: Conifer sawlogs, veneer logs, pulp chips, and hog fuel

f. [ ] Yes [X] No Are group B species proposed for management?
[ ] Yes [X] No Are group B or non-indigenous A species to be used to meet stocking standards?
[ ] Yes [X] No Will group B species need to be reduced to maintain relative site occupancy of A species?

If any answer is yes, list the species, describe treatment, and provide the LTO with necessary felling and slash treatment guidance. Explain who is responsible and what additional follow-up measures of manual treatment or herbicide treatment are to be expected to maintain relative site occupancy of A species. Explain when a licensed Pest Control Advisor shall be involved in this process.

g. Other instructions to LTO concerning felling operations.

In the selection unit, special care shall be taken to protect areas of advanced reproduction. Specifically: 1) use existing skid trails and landings; 2) where new skid trails and landings are needed, locate skid trails and landings in open areas; 3) use directional tree falling to avoid reproduction, designated wildlife trees, and snags;

In the WLPZ of Soup Creek, directionally fall out of WLPZ

h. [ ] Yes [X] No Will artificial regeneration be required to meet stocking standards?

j. [ ] Yes [X] No Will site preparation be used to meet stocking standards? If yes, provide the information required for a site preparation addendum, as per 14 CCR 915.4 (935.4, 955.4).

j. If the rehabilitation method is chosen provide a regeneration plan as required by 14 CCR 913 (933, 953) .4 (b).

PESTS

15. a. [ ] Yes [X] No Is this THP within an area that the Board of Forestry and Fire Protection has declared a Zone of Infestation or Infection, pursuant to PRC 4712 - 4718? If yes, identify feasible measures being taken to mitigate adverse infestation or infection impacts from the timber operation. See 14 CCR 937.9 (a).

b. [ ] Yes [X] No If outside a declared zone, are there any insect, disease or pest problems of significance in the THP area? If yes, describe the proposed measures to improve the health, vigor, and productivity of the stand(s).

HARVESTING PRACTICES

16. Indicate type of yarding system and equipment to be used:

GROUND BASED*	CABLE	SPECIAL
a. [X] Tractor, including end/long lining	d. [ ] Cable, ground lead	g. [ ] Animal
b. [X] Rubber tired skidder, Forwarder	e. [ ] Cable, high lead	h. [ ] Helicopter
c. [X] Feller buncher	f. [ ] Cable, Skyline	i. [ ] Other

* All tractor operations restrictions apply to ground based equipment.

The following standards are applicable to tractor operations:

(a) Tractor operations shall be conducted in a manner which complies with 14 CCR 914 [934, 954]. Timber operations shall be conducted to meet the goal of maximum sustained production of high quality timber products; minimize breakage of merchantable timber; prevent unreasonable damage to residual trees, fish and wildlife habitat as identified in the THP, or contained in the rules, reproduction, and riparian vegetation; prevent degradation of the quality and beneficial uses of water; and maintain site productivity by minimizing soil loss. The following provisions shall be applied in a manner which achieves this standard.

(b) Tractor, or other heavy equipment which is equipped with a blade, shall not operate on skid roads or slopes that are so steep as to require the use of the blade for braking.

(c) Tractor roads shall be limited in number and width to the minimum necessary for removal of logs. When less damage to the resources specified in 14 CCR 914 [934, 954] will result, existing tractor roads shall be used instead of constructing new tractor roads.

(d) Heavy equipment shall not operate on unstable areas.

(e) Slash and debris from timber operations shall not be bunched adjacent to residual trees required for silvicultural or wildlife purposes, or placed in locations where they could be discharged into a Class I or II watercourse, or lake.

(g) Where tractor roads are constructed, timber operators shall use tractor roads only, both for skidding logs to landings and on return trips.

(h) Timber operators shall exercise due diligence so that desirable residual trees and seedlings will not be damaged or destroyed in tractor operations.

(i) Where waterbreaks cannot effectively disperse surface runoff, other erosion controls shall be installed, as needed.

17. Erosion Hazard Rating: Indicate Erosion Hazard Ratings present on THP. (Must match EHR worksheets)

[ ] Low [X] Moderate [ ] High [ ] Extreme

If more than one rating is checked, areas must be delineated on map down to 20 acres in size (10 acres for high and Extreme EHRs in the Coast District).

18. Soil Stabilization: In addition to the standard waterbreak requirements describe soil stabilization measures or additional erosion control measures to be implemented and the location of their application. See requirements of 14 CCR 916.7 (936.7, 956.7), and 923.2 (943.2, 963.2) (m), and 923.5 (943.5, 963.5) (f).

(a) Except as otherwise provided for in the rules:

(1) All waterbreaks shall be installed no later than the beginning of the winter period of the current year of timber operations.

(2) Installation of drainage facilities and structures is required from October 15 to November 15 and from April 1 to May 1 on all constructed skid trails and tractor roads prior to sunset if the National Weather Service forecast is a "chance" (30% or more) of rain within the next 24 hours.

(b) Waterbreaks shall be constructed concurrently with the construction of firebreaks and immediately upon conclusion of use of tractor roads, roads, layouts, and landings which do not have permanent and adequate drainage facilities, or drainage structures.

(c) Distances between waterbreaks shall not exceed the following standards:

Maximum Distance between Water-bars by EHR and Road or Trail Gradient

EHR Rating	10% or less	11-25%	26-50%	Over 50%
Moderate	200 feet	150 feet	100 feet	75 feet

(e) Waterbreaks shall be installed at all natural watercourses on tractor roads and firebreaks regardless of the maximum distances specified in this section, except where permanent drainage facilities are provided.

(f) Waterbreaks shall be located to allow water to be discharged into some form of vegetative cover, duff, slash, rocks, or less erodible material wherever possible, and shall be constructed to provide for unrestricted discharge at the lower end of the waterbreak so that water will be discharged and spread in such a manner that erosion shall be minimized. Where waterbreaks cannot effectively disperse surface runoff, including where waterbreaks on roads and skid trail cause surface run-off to be concentrated on down slopes, roads or skid trails, other erosion controls shall be installed as needed to comply with Title 14 CCR 914 [934, 954].

(g) Waterbreaks shall be cut diagonally a minimum of 15.2 cm (6 inches) into the firm roadbed, cable road, skid trail or firebreak surface and shall have a continuous firm embankment of at least 15.2 cm (6 in.) in height immediately adjacent to the lower edge of the waterbreak cut.

(h) Waterbreaks or any other erosion controls on skid trails, cable roads, layouts, firebreaks, abandoned roads, and site preparation areas shall be maintained during the prescribed maintenance period and during timber operations as defined in PRC Sections 4527 and 4551.5 so that they continue to function in a manner which minimizes soil erosion and slope instability and which prevents degradation of the quality and beneficial uses of water. The method and timing of waterbreak repair and other erosion control maintenance shall be selected with due consideration given to the protection of residual trees and reproduction and the intent of 14 CCR 914 [934, 954].

(i) The prescribed maintenance period for waterbreaks and any other erosion control facilities on skid trails, cable roads, layouts, firebreaks, abandoned roads, and site preparation areas, shall be at least one year. The Director may prescribe a maintenance period extending as much as three years after filing of the work completion report in accordance with 14 CCR 1050.

1- Under road maintenance, rolling dips will be installed instead of water bars, whenever possible. Roads, when graded, will be out-sloped with no outside berms, wherever feasible.

2- Where mineral soil exceeding 800 continuous square feet in size is exposed by timber operations within a WLPZ, it shall be treated for reduction of soil loss by either 1) spreading of slash over the mineral soil or 2) seeding and mulching with erosion control seed mix consisting of wheat grass and /or orchard grass applied at the rate of 22 lbs per acre, and straw mulching applied in a quantity sufficient to cover 90% of the ground. This shall be accomplished prior to October 15th or 10 days after creation if disturbed after October 15th.

3- Upon completion of operations landing slash will be chipped, piled for burning or scattered.

4- Should perpendicular ruts within the ELZ of a Class III be formed that are capable of channeling overland flow and sediment directly into the Class III channel, slash or straw mulch shall be spread over the rut prior to October 15.

19. [ ] Yes [X] No Are tractor or skidder constructed layouts to be used? If yes, specify the location and extent of use:

20. [ ] Yes [X] No Will ground based equipment be used within the area(s) designated for cable yarding? If yes, specify the location and for what purpose the equipment will be used. See 14 CCR 914.3 (934.3, 954.3) (e).

21. Within the THP area will ground based equipment be used on:

a. [ ] Yes [X] No Unstable soils or slide areas? Only allowed if unavoidable.
b. [ ] Yes [X] No Slopes over 65%?
c. [ ] Yes [X] No Slopes over 50% with high or extreme EHR?
d. [ ] Yes [X] No Slopes between 50% and 65% with moderate EHR where heavy equipment use will not be restricted to the limits described in 14 CCR 914 (934, 954) .2 (f) (2) (i) or (ii)?
e. [ ] Yes [X] No Slopes over 50% which lead without flattening to sufficiently dissipate water flow and trap sediment before it reaches a watercourse or lake?

If a. is yes, provide site specific measures to minimize effect of operations on slope stability below. Provide explanation and justification in section III as required per 14 CCR 934.2 (d). CDF requests the RPF consider flagging tractor road locations if ña.ò is yes. If b., c., d. or e. is yes: 1) the location of tractor roads must be flagged on the ground prior to the PHI or start of operations if a PHI is not required, and 2) you must clearly explain the proposed exception and justify why the standard rule is not feasible or would not comply with 14 CCR 914 (934, 954). The location of heavy equipment operation on unstable areas or any use beyond the limitations of the standard rules must be shown on the map. List specific instructions to the LTO below.

22. [ ] Yes [X] No Are any alternative practices to the standard harvesting or erosion control rules proposed for this plan? If yes, provide all the information as required by 14 CCR 914 (934, 954) .9 in Section III.

List specific instructions to the LTO below.

WINTER OPERATIONS

23. a. [X] Yes [ ] No Will timber operations occur during the winter period? If yes, complete ñb, c, or d.ò State in space provided if exempt because yarding method will be cable, helicopter, or balloon.

b. [ ] Yes [X] No Will mechanical site preparation be conducted during the winter period? If yes, complete ñdò

c. [X] I choose the in-lieu option as allowed in 14 CCR 914 (934, 954).7 (c). Specify below the procedures listed in subsections (1) and (2), and list the site specific measures for operations in the WLPZ and unstable areas as required by subsection (3), if there will be no winter operations in these areas, so state.

d. [ ] I choose to prepare a winter operating plan per 14 CCR 914 (934, 954) .7 (b).

Winter operations will be under the following guidelines:

Tractor yarding or the use of tractors for constructing layouts, firebreak or other tractor roads shall be done only during dry, rainless periods where soils are not saturated. Saturated Soil Conditions means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur. Indicators of saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing material during timber operations, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning of wheels or tracks that produces a wet slurry, or (5) inadequate traction without blading wet soil or surfacing materials.

1-Erosion control structures shall be installed on all constructed skid trails and tractor roads prior to sunset if the U.S. Weather Service forecast is a ñchanceò (30% or more) of rain within the next 24 hours, and prior to weekend or other shutdown periods.

2-No operations within the WLPZ, or ELZ. Existing road crossings (with crossing structures) may be used for hauling during dry conditions (no grading to remove muddy surface).

Hard Frozen Conditions means those frozen soil conditions where loaded or unloaded vehicles can travel without sinking into the road surfaces to a depth of more than six inches over a distance of more than 25 feet.

Stable operating surface means that throughout the period of use, the operating surface of a logging road or landing does not either (1) generate waterborne sediment

in amounts sufficient to cause a turbidity increase in downstream Class I, II, III, or IV waters, or in amounts sufficient to cause a turbidity increase in drainage facilities that discharge into Class I, II, III, or IV waters or, that is visible or would violate applicable water quality requirements; or (2) channel water for more than 50 feet that is discharged into Class I, II, III, or IV waters.

Saturated Soil Conditions means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur. Indicators of saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing material during timber operations, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning of wheels or tracks that produces a wet slurry, or (5) inadequate traction without blading wet soil or surfacing materials.

.

NOTE: All water breaks and rolling dips must be installed by October 15 or as prescribed above.

NOTE: "Winter Period" means the period between November 15 and April 1, except as noted under special County Rules at Title 14 CCR 925.1, 926.18, 927.1, and 965.5… (a) except as otherwise provided in the rules: (1) All waterbreaks shall be installed no later than the beginning of the winter period of the current year of timber operations. (2) Installation of drainage facilities and structures is required from October 15 to November 15 and April 1 to May 1 on all constructed skid trails and tractor roads prior to sunset if the National Weather Service forecast is a "chance" (30% or more) of rain within the next 24 hours.

ROADS AND LANDINGS

24. Will any roads be constructed? [X] Yes [ ] No, or reconstructed? [ ] Yes [X] No. If yes, check items ña.ò through ñg.ò Will any landings be constructed? [X] Yes [ ] No, or reconstructed? [ ] Yes [X] No. If yes, check items ñh.ò through ñk.ò

a. [ ] Yes [X] No Will new or reconstructed roads be wider than single lane with turnouts?

b. [ ] Yes [X] No Are logging roads proposed in areas of unstable soils or known slide-prone areas?

c. [ ] Yes [X] No Will new roads exceed a grade of 15% or have pitches of up to 20% for distances greater than 500 feet? Map must identify any new or reconstructed road segments that exceed an average 15% grade for over 200 feet.

d. [ ] Yes [X] No Are roads to be constructed or reconstructed, other than crossings, within the WLPZ of a watercourse? If yes, completion of THP Item 27 a. will satisfy required documentation.

e. [ ] Yes [X] No Will roads be located across more than 100 feet of lineal distance on slopes over 65%, or on slopes over 50% which are within 100 feet of the boundary of a WLPZ?

f. [ ] Yes [X] No Will any roads or watercourse crossings be abandoned?

g. [ ] Yes [X] No Are exceptions proposed for flagging or otherwise identifying the location or roads to be constructed?

h. [ ] Yes [X] No Will any landings exceed one half acre in size? If any landing exceeds one quarter acre in size or requires substantial excavation the location must be shown on the map.

i. [ ] Yes [X] No Are any landings proposed in areas of unstable soils or known slide prone areas?

j. [ ] Yes [X] No Will any landings be located on slopes over 65% or on slopes over 50% which are within 100 feet of the boundary of a WLPZ?

k. [ ] Yes [X] No Will any landings be abandoned?

25. If any section in ñtem 24òabove is answered yes, specify site-specific measures to reduce adverse impacts and list any additional or special information needed by the LTO concerning the construction, maintenance, and/or abandonment of roads or landings, as required by 14 CCR Article 12. Include required explanation and justification in THP Section III.

Approximately 100 feet of new road construction will allow access to the west side of Soup Creek. Road construction will be minor, mostly minor grading and vegetation removal. There will be only a minor amount of excavation and fill. A low water crossing of Soup Creek will be necessary.

One new landing is proposed for this project, the landing will be constructed on less the 30 percent slopes on the west side of Soup Creek.

CCR 943.2- Road Construction

(f) On slopes greater than 35 percent, the organic layer of the soil shall be substantially disturbed or removed prior to fill placement.

(g) Excess material from road construction and reconstruction shall be deposited and stabilized in a manner or in areas where downstream beneficial uses of water will not be adversely affected.

(h) Drainage structures and facilities shall be of sufficient size, number, and location to carry runoff water off of roadbeds, landings and fill slopes. Drainage structures or facilities shall be installed so as to minimize erosion, to ensure proper functioning, and to maintain or restore the natural drainage pattern. Permanent watercourse crossings and associated fills and approaches shall be constructed where feasible to prevent diversion of stream overflow down the road and to minimize fill erosion should the drainage structure become plugged.

(j) Waste organic material, such as uprooted stumps, cull logs, accumulations of limbs and branches, and un-merchantable trees, shall not be buried in road fills. Wood debris or cull logs and chunks may be placed and stabilized at the toe of fills to restrain excavated soil from moving downslope.

(k) Logging roads shall be constructed without overhanging banks.

(l) Any tree over 12 inches (30.5 cm) dbh. with more than 25% of the root surface exposed by road construction, shall be felled concurrently with the timber operations.

(**m**) Side-cast or fill material extending more than 20 ft. (6.1 m) in slope distance from the outside edge of the roadbed which has access to a watercourse or lake which is protected by a WLPZ shall be seeded, planted, mulched, or removed, to adequately reduce soil erosion. Seeding and mulching with erosion control seed mix consisting of wheat grass and /or orchard grass applied at the rate of 22 lbs per acre, and straw mulching applied in a quantity sufficient to cover 100% of the ground. This shall be accomplished prior to October 15th.

(o) Drainage structures and drainage facilities on logging roads shall not discharge on erodible fill or other erodible material unless suitable energy dissipaters are used.

934.6(f) Waterbreaks shall be located to allow water to be discharged into some form of vegetative cover, duff, slash, rocks, or less erodible material wherever possible, and shall be constructed to provide for unrestricted discharge at the lower end of the waterbreak so that water will be discharged and spread in such a manner that erosion shall be minimized.

(p) Where roads do not have permanent and adequate drainage, the specifications of Section 914.6 [934.6, 954.6] shall be followed.

(q) Drainage facilities shall be in place and functional by October 15. An exception is that waterbreaks do not need to be constructed on roads in use after October 15 provided that all such waterbreaks are installed prior to the start of rain that generates overland flow.

(r) No road construction shall occur under saturated soil conditions, except that construction may occur on isolated wet spots arising from localized ground water, provided measures are taken to prevent material from significantly damaging water quality.

(s) Completed road construction shall be drained by out-sloping, waterbreaks and/or cross-draining before October 15.

(u) Slash and other debris from road construction shall not be bunched against residual trees which are required for silvicultural or wildlife purposes, nor shall it be placed in locations where it could be discharged into Class II watercourses.

CCR 943.5- Landing Construction

Landings shall be constructed according to the following standards:

(c) Waste organic material, such as uprooted stumps cull logs, accumulations of limbs and branches, or unmerchantable trees, shall not be buried in landing fills. Wood debris or cull logs and chunks may be placed and stabilized at the toe of landing fills to restrain excavated soil from moving downslope.

(d) Constructed landings shall be the minimum in width, size, and number consistent with the yarding and loading system to be used. Landings shall be no larger than one-half acre (.202 ha)

(e) No landing construction shall occur under saturated soil condition.

(f) The following specifications shall be met upon completion of timber operations for the year or prior to October 15, whichever occurs first:

(1) Any obstructed ditches and culverts shall be cleaned.

(2) Landings shall be sloped or ditched to prevent water from accumulating on the landings. Discharge points shall be located and designed to reduce erosion.

(3) Side-cast or fill material extending more than 20 feet in slope distance from the outside edge of the landing and which has access to a watercourse or lake shall be seeded, planted, mulched, removed or treated to adequately reduce soil erosion. Seeding and mulching with erosion control seed mix consisting of wheat grass and /or orchard grass applied at the rate of 22 lbs per acre, and straw mulching applied in a quantity sufficient to cover 90% of the ground. This shall be accomplished prior to October 15th.

(4) Sidecast or fill material extending across a watercourse shall be removed in accordance with standards for watercourse crossing removal set forth in 14 CCR 923.3 (d).

(g) On slopes greater than 35%, the organic layer of the soil shall substantially remove prior to fill placement.

One new landing is proposed for this project, the landing will be constructed on less the 30 percent slopes on the west side of Soup Creek.

WATERCOURSE AND LAKE PROTECTION ZONE (WLPZ) AND DOMESTIC WATER SUPPLY PROTECTION MEASURES

26. a. [X] Yes [ ] No Are there any watercourse or lakes which contain Class I through IV waters on or adjacent to the plan area? If yes, list the class, WLPZ or ELZ width, and protective measures determined from Table I and/or 14 CCR 916 (936, 956) .4 (c) of the WLPZ rules for each watercourse. Specify if Class III or IV watercourses have WLPZ, ELZ or both.

Watercourse Number	Class	Approximate Length	Average Gradient %	Average Side Slope %	WLPZ/EEZ/ ELZ Widths
1	Class I Soup Creek	7,255 feet	1-3%	0-3%	75 foot WLPZ
2	Class III	1,415 feet	1-3%	2-4%	25 foot WLPZ
3	Class IV Irrigation ditch	3,327 feet	1-2%	0-3%	10 foot ELZ
4	Class IV Irrigation ditch	1,245 feet	1-2%	0-3%	10 foot ELZ
5	Class IV Irrigation ditch	1,650 feet	1-2%	0-3%	10 foot ELZ
6	Class IV Irrigation ditch	1,980 feet	1-2%	0-3%	10 foot ELZ
7	Class IV Irrigation ditch	3,563 feet	1-2%	0-3%	10 foot ELZ
8	Class III	1,320 feet	1-2%	0-3%	25 foot WLPZ

NOTE: Watercourse # 1-8 are annotated as watercourse segments #1-8 on THP Plat Map, page # 39

Class I Watercourse (Soup Creek is a natural spring fed creek that flows into Mill Creek.**)**

ñAò- WLPZ shall be clearly identified on the ground by the RPF who prepared the plan, or his designee, with blue and white striped flagging, or blue paint, prior to the pre-harvest inspection. The WLPZ will be **75 feet** wide where slopes are less than **30%**, **100 feet** wide where slopes are **30% to 50%** and **150 feet wide** where slopes **exceed 50%.**

ñDò- To ensure retention of shade canopy filter strip properties of the WLPZ and the maintenance of a multi-storied stand for protection of values described in 936.4(b) a base mark below the cut line of residual or harvest trees within the zone shall be done in advance of the pre-harvest inspection by the RPF or supervised designee. When sample marking has been used, all marking shall be done in advance of falling operations within the WLPZ.

ñGò- To protect water temperature, filter strip properties, up-slope stability, and fish and wildlife values, at least 50% of the overstory and 50% of the understory canopy covering the ground and adjacent waters shall be left in a well distributed multi-storied stand composed of a diversity of species similar to that found before the start of operations. The residual overstory canopy shall be composed of species similar to that found before the start of operations. The residual overstory canopy shall be composed of at least 25% of the existing overstory conifers.

CCR 936.3 (e)- Trees cut within the WLPZ shall be felled away from the watercourse by pulling or other mechanical methods if necessary, in order to protect the residual vegetation in the WLPZ.

CCR 936.3 (f)- Where less than 80% canopy exists in the WLPZõs of Class I and II waters before timber operations, only sanitation salvage which protects the values described in 14 CCR 916.4(b) [936.4(b), 956.4(b)] shall be allowed.

CCR 936.3(g) - Recruitment of large woody debris for in-stream habitat shall be provided by retaining at least two living conifers per acre at least 16 inches diameter breast high and 50 ft. tall within 50 ft. of all Class I and II watercourses

CCR 936.4(b)(6)- Within the WLPZ, at least 75% surface cover and undisturbed area shall be retained to act as a filter strip for raindrop energy dissipation, and for wildlife habitat.

Class III Watercourses

C- The width of the WLPZ shall be considered to be **25 feet** from the edge of the channel on each side of the watercourse where slopes are less than **30%** and **50 feet** where slopes are **30% or greater.**

Crossings shall be cleaned out before the winter season or upon completion of operations in that area.

F-Trees to be harvested have been marked within the WLPZ to ensure retention of filter strip properties or to maintain soil stability of the zone.

H - At least 50 percent of the understory vegetation present before timber operations shall be left living and well distributed within the WLPZ to maintain soil stability.

14 CCR 936.4(c)(3)- Soil deposited during timber operations in a Class III watercourse

other than a temporary crossing shall be removed and debris deposited during timber operations shall be removed or stabilized before the conclusion of timber operations, or before October 15. Temporary crossings shall be removed before the winter period.

Note: Skid trail crossings will be used only when the crossing is dry.

When Class III watercourse crossings, other drainage structures, and associated fills are removed the following standards shall apply:

1-Fills shall be excavated to form a channel that is as close as feasible to the natural watercourse grade and orientation, and that is wider than the natural channel.

2-The excavated material and any resulting cut bank shall be sloped back from the channel and stabilized to prevent slumping and to minimize soil erosion. Where needed, this material shall be stabilized by seeding, mulching, rock armoring, or other suitable treatment.

Class IV Watercourses (Irrigation Ditches)

The irrigation ditches are used to flood irrigate the meadow on each side of Soup Creek in Sections 24 & 26 T40N R4E. The water source for all of the ditches is Soup Creek.

The Class IV watercourses crossings are designated on the Plat Map. Since this is a conversion to grassland, all of the trees adjacent to the ditches will be removed in the conversion. The Class IV watercourses will have a 10 feet ELZ on each side of the watercourse.

Water Drafting Hole

Only one drafting location is proposed at this time (see Drafting Hole location map). The drafting hole is off the THP site, and is located at the bridge leading to the Flournoy Ranch house on Mill Creek, at the intersection of USFS 42N05 and Flournoy Ranch road. An estimated five to six loads (4,000 gallons each) of water will be used per day when dust control is needed. Drafting rate would be about 200 gallons per minute.

The water truck operator shall monitor the filling progress so that over-filling and spillage does not occur. Drafting will generally occur during the months of June through November. The estimated filling time is 15 ï 20 minutes.

At the drafting location, water drafting equipment shall be screened with wire mesh,

perforated pates, or durable fabric with openings no larger than 3/32-inch diameter. Water moving through screens shall not exceed 0.33 feet per second. The screens shall be kept clean and free of accumulated algae, leaves, or other debris which could block portions of the screen surface and increase velocities in non-blocked portions. Should there be any oil leaks on the drafting equipment appropriate measures shall be taken to prevent oil from getting onto the ground at the drafting site or within the riparian zone.

b. [X] Yes [ ] No Are there any watercourse crossings that require mapping per 14 CCR 1034 (x)

Watercourse Crossing Inventory

SECTION 25

Crossing #1- use existing functional 18 inch CMP truck haul road crossing of a Class IV watercourse.

Crossing #2- use existing functional 48 inch CMP truck haul road crossing of Class I watercourse.

Crossing #3- use existing functional 18 inch CMP truck haul road crossing of a Class IV watercourse, (Note) will need additional fill over existing CMP.

SECTION 24

Crossing #4- Install a functional temporary 12 inch CMP for skid trail crossing of a Class IV watercourse.

Crossing #5- Install a functional temporary 12 inch-12 foot CMP for skid trail crossing of a Class IV watercourse.

Crossing #6- use existing functional 12 inch CMP truck haul road crossing of a Class IV watercourse.

Crossing #7- **install a rock ford** truck haul road crossing of Class I watercourse. Refer to Figure 1

Crossing #8- install a functional temporary 12 inch-12 foot CMP for skid trail crossing of a Class IV watercourse.

Crossing #9- **install a rock ford** truck haul road crossing of Class III watercourse. Refer to Figure 1

Crossing #10- use existing functional 18 inch CMP truck haul road crossing of Class III watercourse

Crossing #11- proposed Class III watercourse skid road crossing. Clean out debris and

reestablish stream channel.

Drafting Hole- Bridge crossing of Mill Creek at intersection of Flournoy Ranch and Jess Valley (F.S. road 42N05) in Section 11 (see Drafting Location Map).

Note: Culvert inlets, upstream debris, and culvert outlets will be checked and/or cleaned as part of routine maintenance during operations.

DEFINITIONS

Energy Dissipater means a device or material used to reduce the energy of flowing water. The four energy dissipation options are 1) outlet flows into dense vegetation, 2) packed slash sufficient to dissipate the maximum outlet flow, 6 inches deep, and 3) rock armor with local pit run rock sufficient to dissipate the maximum outlet flow, and 4) the streambed is down to bedrock and is incapable of scouring, and does not need an energy dissipater.

Critical dip (broad overflow dip) shall be designed to allow standard log trucks to travel at reduced speeds. The critical dip may be constructed to discharge either at the intersection of the crossing fill with the valley wall, or over the fill face in a spillway. The critical dip shall be of sufficient depth to prevent water transport down the road. The location of the ñCritical Dipòwill be at the lowest point of the top of the fill

Rocked fords shall have the road approaches V shaped with the lowest point in the creek crossing. This will prevent water flowing down the road. The crossing shall be rocked with local pit run 3 inch plus rock to a compacted depth of 6 inch, each side of the crossing. If the outlet of the ford is not down to exposed bedrock, the outlet of the ford shall have an energy dissipater installed. Road cross drains shall be installed 25 feet each side of crossing

Mulching - Where mineral soil exceeding 800 continuous square feet in size is exposed by timber operations within a WLPZ, it shall be treated for reduction of soil loss by straw mulching or slash applied in a quantity sufficient to cover 90% of the ground 2 inches in depth. This shall be accomplished prior to October 15th or 10 days after creation, if disturbed after October 15th.

c [X] Yes [ ] No Will tractor road watercourse crossings involve the use of a culvert? If yes state minimum diameter and length for each culvert (may be shown on map).

See Watercourse Crossing List

d. [X] Yes [ ] No Is this THP Review Process to be used to meet Department of Fish and Game CEQA review requirements? If yes, attach the 1603 Addendum below or at the end of this Section II; provide the background information and analysis in Section III; list instructions for LTO below for the installation, protection measures, and mitigation measures; as per THP Form Instructions or CDF Mass Mailing, 07/02/1999, ñFish and Game Code 1603 Agreements and THP Documentationò

THP Addendum Questions for 1603 Agreements: DFG 2023B-Attachment B

I. PROJECT NAME AND THP NUMBER

Brooks Mill THP

II. PROJECT LOCATION

The project is located in section 24, 25 & 36, T40N, R14E MDBM. See the Transportation Map for road access from Jess Valley Road, (Co-64) to USFS Road 42N05. The proposed temporary rock ford truck haul road crossing of a Class I watercourse is located at Crossing #7, THP Plat Map, page #39.

III. PROJECT DESCRIPTION

A. Watercourse Crossing #7. See THP Plat Map.

Type	Watercourse Class	Structure	Map #
Temporary	I	Rock Ford	Plat Map, page 39

B. The location of the proposed streambed crossing is on a rocky flat with a streambed gradient of 1-2 % and gentle sideslopes (<5%). No problems are anticipated.

C. The anticipated operating period is from August 1st to October 15th during the life of the THP.

D. No culverts are proposed

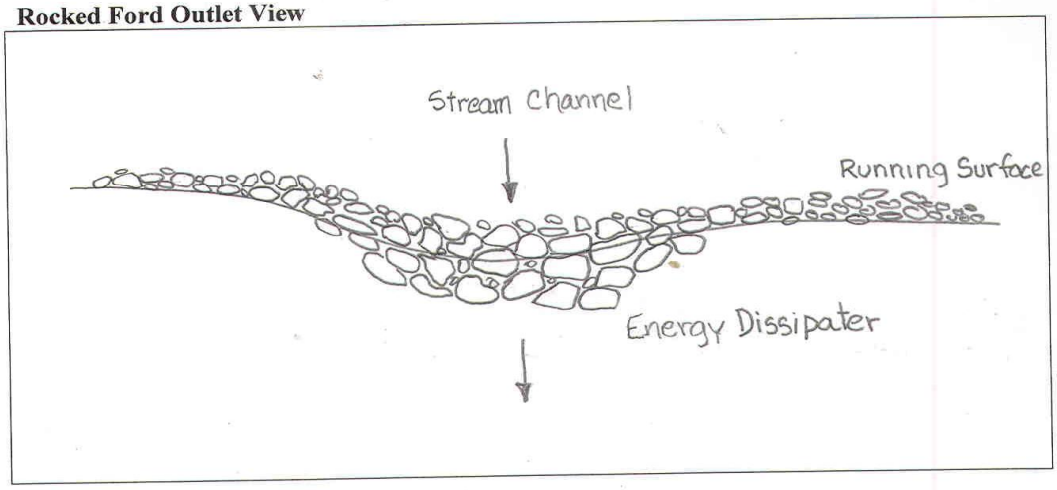
E. No bridges are planned

F. The installation of the temporary rock ford will not require water diversion

Section II–PLAN OF TIMBER OPERATIONS
(PART OF PLAN)
Brooks Mill THP

Figure 1-Permanent Truck Road Rocked Ford Crossing

Rocked Ford Outlet View



For all truck haul road crossings and road segments requiring rock; use 3 inch plus sized competent angular rock compacted to a minimum depth of 6 inches placed to full road width. The running surface shall be rocked (with predominately 3 inch plus rock to a 6 inch. compacted depth) on each approach for 25 feet each side of crossing. 12 inch plus sized rock shall be keyed into the outlet side as an energy dissipater.

27. Are site specific practices proposed in-lieu of the following standard WLPZ practices?

a. [ ] Yes [X] No Prohibition of the construction or reconstruction of roads, construction or use of tractor roads or landings in Class I, II, III, or IV watercourses, WLPZs, marshes, wet meadows, and other wet areas except as follows:

(1) At prepared tractor road crossings.
(2) Crossings of Class III watercourses which are dry at time of timber operations.
(3) At existing road crossings.
(4) At new tractor and road crossings approved by Department of Fish and Game.

b. [ ] Yes [X] No Retention of non-commercial vegetation bordering and covering meadows and wet areas?

c. [ ] Yes [X] No Directional felling of trees within the WLPZ away from the watercourse or lake?

d. [ ] Yes [X] No Decrease of width(s) of the WLPZ(s)?

e. [ ] Yes [X] No Protection of watercourses which conduct class IV waters?

f. [ ] Yes [X] No Exclusion of heavy equipment from the WLPZ except as follows:
(1) At prepared tractor road crossings.
(2) Crossings of Class III watercourses which are dry at time of timber operations.
(3) At existing road crossings.
(4) At new tractor and road crossings approved by Department of Fish and Game.

g. [ ] Yes [X] No Establishment of ELZ for Class III watercourses unless sideslopes are <30% and EHR is low?

h. [ ] Yes [X] No Retention of at least 50% of the overstory canopy in the WLPZ?

i. [ ] Yes [X] No Retention of at least 50% of the understory in the WLPZ?

j. [ ] Yes [X] No Are any additional in-lieu or any alternative practices proposed for watercourse or lake protection?

NOTE: A yes answer to any of items "a." through "j." constitutes an in-lieu practice. If any item is answered yes, refer to 14 CCR 916 (936, 956).1 and address the following for each item checked yes:

1. The RPF shall state the standard rule;
2. Explain and describe each proposed practice;
3. Explain how the proposed practice differs from the standard practice;
4. The specific location where it shall be applied, see map requirements of 14 CCR 1034 (x) (15) and (16);
5. Provide in THP Section III an explanation and justification as to how the protection provided is equal to the standard rule and provides for the protection of the beneficial uses of water, as per 14 CCR 936.1 (a). Reference the in-lieu and location to the specific watercourse to which it will be applied.

28. a. [X] Yes [ ] No Are there any landowners within 1000 feet downstream of the THP boundary whose ownership adjoins or includes a class I, II, or IV watercourse(s) which receives surface drainage from the proposed timber operations? If yes, the requirements of 14 CCR 1032.10 applies. Proof of notice by letter and newspaper should be included in THP Section V. If No, ñ28 b.ò need not be answered.

b. [X] Yes [ ] No Is an exemption requested of the notification requirements of 14 CCR 1032.10? If yes, an explanation and justification for the exemption must appear in THP Section III. Specify if requesting an exemption from the letter, the newspaper notice or both.

A newspaper and letter exemption is requested for the 13 acres in Section 36, T40N, R14E MDBM. The landowner owns the property for more than 1000 ft downstream of this location.

c. [ ] Yes [X] No Was any information received on domestic water supplies that required additional mitigation beyond that required by standard Watercourse and Lake Protection rules? If yes, list site specific measures to be implemented by the LTO.

29. [ ] Yes [X] No Is any part of the THP area within a Sensitive Watershed as designated by the Board of Forestry and Fire Protection? If yes, identify the watershed and list any special rules, operating procedures or mitigation that will be used to protect the resources identified at risk?

HAZARD REDUCTION

30. a. [X] Yes [ ] No Are there roads or improvements which require slash treatment adjacent to them? If yes, specify the type of improvement, treatment distance, and treatment method.

As per CCR 937.2(b) within 100 feet of the edge of the traveled surface of public roads, and within 50 feet of the edge of the traveled surface of permanent private roads open for public use where permission to pass is not required, slash created and trees knocked down by road construction or timber operations shall be treated by lopping for fire hazard reduction.

Slash in the fire protection zone will be lopped so that no part of it generally remains more than 30 inches above the ground.

b. [X] Yes [ ] No Are any alternatives to the rules for slash treatment along roads and within 200 feet of structures requested? If yes, RPF must explain and justify how alternative provides equal fire protection. Include a description of the alternative and where it will be utilized below.

Land owner is proposing an alternative to CCR 937.2(a):

Standard Rule 937.2 (a) (b) Treatment of Logging Slash to Reduce Fire Hazard:
The following standards shall apply to the treatment of slash created by timber operations within the plan area and on roads adjacent to the plan area, but excluding appurtenant roads. Lopping for fire hazard reduction is defined in 14 CCR 895.1

(a) Slash to be treated by piling and burning shall be treated not later than April 1 of the year following its creation, or within 30 days following climatic access, or as justified in the plan.

Alternative: Piles created after September 1st will be treated by December 31st of the year following its creation.

Justification: Slash created after September 1st typically is not dry enough to burn during the burn season of that year. The alternative allows for the slash to dry and still be disposed of the slash in a timely manner.

31. [X] Yes [ ] No Will piling and burning be used for hazard reduction? See 14 CCR 917.1-.11, 937.1-.10, or 957.1-.10, for specific requirements. Note: LTO is responsible for slash disposal. This responsibility cannot be transferred.

CCR 937.5, Burning of Piles and Concentrations of Slash
When the option of burning piles or concentrations of slash is chosen to meet the slash treatment requirements as specified in these rules, such burning shall be done as follows:

(a) Piles and concentrations shall be sufficiently free of soil and other noncombustible material for effective burning.

(b) The piles and concentrations shall be burned at a safe time during the first wet fall or winter weather or other safe period following piling and according to laws and regulations. Piles and concentrations that fail to burn sufficiently to remove the fire hazard shall be further treated to eliminate that hazard. All necessary precautions shall be taken to confine such burning to the piled slash.

CCR 937.6, Notification of Burning
The local representative of the Director shall be notified in advance of the time and place of any burning of logging slash. Any burning shall be done in the manner provided by Law.

CCR 937.7, Protection of Residual Trees
Slash burning operations and fire hazard abatement operations shall be conducted in a manner which will not damage residual trees and reproduction

to the extent that they will not qualify to meet the silvicultural and stocking requirements of the rules.

BIOLOGICAL AND CULTURAL RESOURCES

32. a. [X] Yes [ ] No Are any plant or animal species, including their habitat, which are listed as rare, threatened or endangered under federal or state law, or a sensitive species by the Board, associated with the THP area? If yes, identify the species and the provisions to be taken for the protection of the species.

The following species listed were either 1) observed within the assessment area, 2) listed as federal or state threatened, or endangered, or 3) determined to have potential habitat within the THP

SPECIES	Species observed within THP boundary	Species observed within BAA area
Birds		
Bald Eagle	No	No
Great Gray Owl	No	No
California Spotted Owl	No	Yes
Northern Goshawk	Yes	Yes
Willow Flycatcher	No	No
Greater SandHill Crane	Yes	Yes
Prairie Falcon	No	Yes
Osprey	No	No
Mammals		
American Badger	No	No
American Martin	No	No
California Wolverine	No	No
Pacific Fisher	No	Yes
Sierra Nevada Red Fox	No	No
Fish		
Redband Trout	Yes	Yes
Plants		
Spiked larkspur	No	No
Doublet	No	No
Prostrate buckwheat	No	No
Boggs Lake hedge-hyssop	No	No
MacDougal's lomatium	No	No
Adobe lomatium	No	No

Long bluebells	No	No
Cusickûs monkeyflower	No	No
Hairy marsh hedge-nettle	No	Yes

A more detailed list of species and their habitats that may be found within the BAA and/or THP area is contained in **Section III**. There is individual species distribution, abundance, and seasonality descriptions plus species identification tips in this section.

All species and their habitats considered in the scoping process are listed in **Section IV.**

Guidelines for nests or T&E birds discovered within the harvest area:

If goshawks, unlisted raptors, Board of Forestry Sensitive Species, or other sensitive or listed birds are discovered roosting or nesting within the harvest area, or equal to or less than the limiting distance, harvesting will be suspended immediately in an area equal to the limiting distance, and notification will be made to CDF and DF&G of the location. Harvesting will resume after a DFG consultation has approved mitigation measures.

CCR 939.2- General Protection of Nest Sites
The following general standards for protection of **Sensitive Species** shall apply:

(a) A pre-harvest inspection will normally be required when it is known or suspected that the minimum buffer zone surrounding an active nest of a Sensitive species is in or extends onto an area proposed for timber operations. When the Department is already familiar with the site, the Director, after consultation with the Department of Fish and Game, may waive this requirement.

(b) During timber operations, nest tree(s), designated perch trees(s), screening tree(s), and replacement trees(s), shall be left standing and unharmed except as otherwise provided in these following rules.

(c) Timber operations shall be planned and operated to commence as far as possible from occupied nest trees unless explained and justified by the RPF in the THP.

(d) When an occupied nest site of a listed bird species is discovered during timber operations, the timber operator shall protect the nest tree, screening trees, perch trees, and replacement trees and shall apply the provisions of subsections (b) and (c) above and shall immediately notify the Department of Fish and Game and the Department of Forestry and Fire Protection. An amendment that shall be considered a minor amendment to the timber harvesting plan shall be filed reflecting such additional protection as is agreed between the operator and the Director after consultation with the Department of Fish and Game.

Note: 14 CCR 895.1 **Active Nest** means a bird nest site at which breeding efforts have recently occurred as determined by DF&G, as specified below: Great Blue Heron, Great Egret, recently means within the last two years Golden Eagle, Osprey, Goshawk,

recently means within the last three years Bald Eagle and Peregrine Falcon, recently means within the last five years Nests that have not been used within this time period are considered **abandoned.**

Occupied nest means a nest currently being used by one or more adult birds with eggs or young present.

If any of the following birds or nests is discovered roosting or nesting within the harvest area or equal to or less than the ñlimiting distancesòprovided below by species, harvesting will be suspended immediately and notification will be made to CDF and DF&G of the location.

Limiting Distances by Species:

Bald Eagle ï	0.5 miles (2640 feet)
Prairie Falcon-	0.5 miles (2640 feet)
Greater Sandhill Crane-	0.5 miles (2640 feet)
Golden Eagle-	0.5 miles (2640 feet)
Osprey-	0.25 miles (1320 feet)
Goshawk-	0.25 miles (1320 feet)
Willow flycatcher-	300 feet

CCR 939.3 Specific Requirements for Protection of Nest Sites

The following requirements shall apply to nest sites containing active nests and not to nest sites containing only abandoned nests.

(a) Buffer zones shall be established around all nest trees containing **active nests**. The buffer zones shall be designed to best protect the nest site and nesting birds from the effects of timber operations. In consultation with the Department of Fish and Game, and as approved by the Director, an RPF or supervised designee shall flag the location of the boundaries of the buffer zone, and the configuration of the buffer zone. Consultation with the Department of Fish and Game shall be required pursuant to 14 CCR 898. Consideration shall be given to the specific habitat requirements of the bird species involved when configuration and boundaries of the buffer zone are established.

(b) The size of the buffer zone for each species shall be as follows:

(1) For the **Bald Eagle** and **Peregrine Falcon**, the buffer zone shall be a minimum of **ten acres** in size. The Director may increase the buffer zone beyond 40 acres in size so that timber operations will not result in a "take" of either species. The Director shall develop the buffer zone in consultation with the Department of Fish and Game and the RPF.

(2) For the **Golden Eagle**, the buffer zone shall be a minimum of **eight acres** in size.

(3) For the **Greater Sandhill Crane**, the buffer zone shall consist of the area within a **300- foot radius** of a tree or trees containing a group of five or more active nests in close proximity as determined by the Department of Fish and Game.

(4) For the **Northern Goshawk**, the buffer zone shall be a minimum of **five acres** in size. When explained and justified in writing, the Director may increase the size of the buffer zone to a maximum of 20 acres when necessary to protect nesting birds.

(5) For the **Osprey,** the buffer zone shall be up to **five acres** in size. When explained and justified in writing, the Director may increase the size of the buffer zone to a maximum of 18 acres when necessary to protect nesting birds.

Nest Protection Measures Associated with Non-listed Raptors:

a) The nest tree, perch trees, replacement trees, and screening trees shall be protected.
b) Should operations cause the nesting raptor to vocalize, get up from a brooding position, or fly off the nest, operations will be moved back from the nest far enough to stop this agitated behavior by the raptor.
c) Operations can resume in the set back area once the young or adults have not been detected in this set back area for 2 consecutive visits after July 15th.
d) The RPF will advise the DFG prior to the end of the year in which the occupied nest was discovered of: a) the raptor species encountered, b) the size of any set back buffer employed, and c) the reproductive success or failure of the discovered nest. This information will allow the DFG to assess the effectiveness of this mitigation measure and incorporate this information in an adaptive management type approach in future THPs

In the case a Listed Mammal is observed:

- the LTO shall cease operations within 660-1320 feet (depending on species, refer to Section III) of the discovered den site
- the responsible plan RPF should be notified immediately to advise on mitigation responses.
- once the listed species is identified, DFG and CDF shall be notified, 939.2,
- an amendment that shall be considered a minor amendment to the THP shall be filed reflecting such protection as is agreed between the operator and the Director after consultation with DFG

In the case a Pacific fisher is observed:

- If a fisher den site or female with young is discovered, the LTO shall cease operations within 1320 feet of the site,
-the responsible plan RPF should be notified immediately to advise on mitigation responses.
-once the listed species is identified, the pertinent DFG Timberland Planning office shall be notified. For this THP: Redding Main Office -- Inland Timberland Planning- Jennifer Carlson- Environmental Scientist-601 Locust Street -Redding, CA 96001- (530) 225-2754 or (530)-941-7472 (cell). Include the time of the sighting, the date, and map location**.**
-an amendment that shall be considered a minor amendment to the THP shall be filed reflecting such protection as is agreed between the RPF and the Director after consultation with DFG
-additionally- observations, detections, and take shall be reported to DFG- Wildlife Branch- Attn: Fisher Observations- 1812 Ninth St- Sacramento, CA 95811 or by email to

fisherdata@dfg.ca.gov. Include a contact name- the date and location (GPS coordinate preferred) of the observation, detection, or take and details of the animal observed.

In the case a Sierra Nevada Red Fox is observed:
-LTO will be provided with instructions and education on identifying red fox, sign, and denning areas (pictures and identification).
-During timber operations, if a red fox is observed within the plan area boundary, operations within 0.25 mile shall cease until after the critical breeding period (February 1 to June 30) or consultation with DFG

In the case a Listed or Sensitive Plant is observed:
1) If any sensitive plants are identified during harvest operations, the plants will be flagged, mapped, and a 50-foot zone of no operations will be established around plant occurrences.
2) CDF and the RPF shall be notified within 24 hours.
3) In consultation with DF&G and CDF, equivalent or more effective protection measures may be developed and amended into the THP.

Plant Survey

Martin J. Lenz has conducted a plant survey in 2009 and no listed or sensitive plants were located within the THP. The survey results are in Section V.

b. [ ] Yes [X] No Are there any non-listed species which will be significantly impacted by the operation? If yes, identify the species and the provisions to be taken for the protection of the species.

NOTE: See THP Form Instructions or the CDF Mass Mailing, 07/02/1999, section on ACDF Guidelines for Species Surveys and Mitigations to complete these questions.

33. [X] Yes [ ] No Are there any snags which must be felled for fire protection or safety reasons? If yes, describe which snags are going to be felled and why.

14 CCR 939.1, within the logging area all snags shall be retained to provide wildlife habitat except as follows:

The LTO will fall snags under the following conditions:

(a) For hazard reduction within 100 feet of all public roads, permanent roads, seasonal

roads, landings, and railroad.

(b) Where federal and state safety laws and regulations require felling of snags.

(c) Within 100 feet of structures maintained for human habitation.
(d) Merchantable snags (25% sound) except for designated wildlife snags (a painted W on snag) and those within the WLPZ.
(e) Snags whose falling is required for insect and disease control.

ALL SNAGS WILL BE REMOVED FROM THE CONVERSION AREA.

34. [ ] Yes [X] No Are any Late Succession Forest Stands proposed for harvest? If yes, describe the measures to be implemented by the LTO that avoid long-term significant adverse effects on fish, wildlife and listed species known to be primarily associated with late succession forests.

35. [ ] Yes [X] No Are any other provisions for wildlife protection required by the rules? If yes, describe.

36. a. [X] Yes [ ] No Has an archaeological survey been made of the THP area?
b. [X] Yes [ ] No Has a current archaeological records check been conducted for the THP area?
c. [X] Yes [ ] No Are there any archaeological or historical sites located in the THP area? Specific site locations and protection measures are contained in the Confidential Archaeological Addendum in Section VI of the THP, which is not available for general public review.

37. [X] Yes [ ] No Has any inventory or growth and yield information designated "trade secret" been submitted in a separate confidential envelope in Section VI of this THP?

38. Describe any special instructions or constraints that are not listed elsewhere in Section II.

1- All pine tops shall be lopped as per Technical Addendum #3. Lop all branches from the sides and top of those portions of main stems that are 3ò or more in diameter.

2- Flagging Codes Used:

Solid Blue	Property Boundary
Blue and White striped	WLPZ
Solid Blue & Solid White	ELZ
Solid Orange w/ ñTruck Roadòwritten on it	Truck Road
Solid Yellow w/ ñSkid Trailòwritten on it	Skid trail

3- Post signs on USFS 42N05 (Jess Valley Road) warning vehicular traffic of truck traffic entering the roadway.

4- The RPF shall be responsible for notifying CDF of commencement of timber operations. Each calendar year, within 15 days before, and not later than the day of the start up of timber operations, the plan submitter shall notify the CDF Forest Practice Officer Technician at the following address and/or telephone number:

CAL FIRE
Lassen-Modoc Unit
697 345 Hwy 36
Susanville, Ca. 96130

(530)-257-4171

5- Operations are not allowed west of Soup Creek during the critical breeding period for goshawks, March 15-August 15, unless a same year survey has been completed with a negative results.

6- Operations are not allowed during the critical breeding period for greater sandhill cranes, March 1-August 1, unless a same year survey has been completed with a negative result.

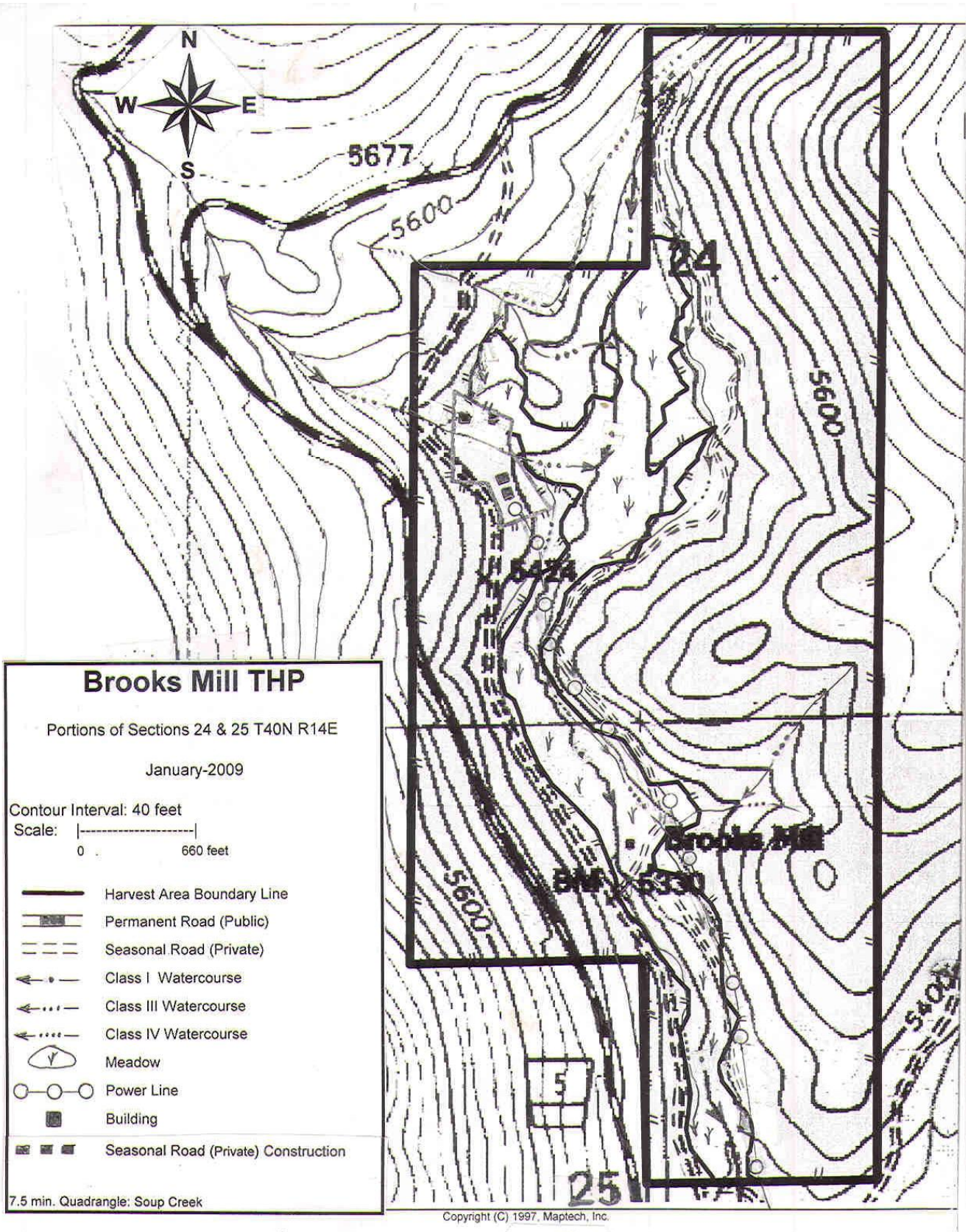
DIRECTOR OF FORESTRY AND FIRE PROTECTION

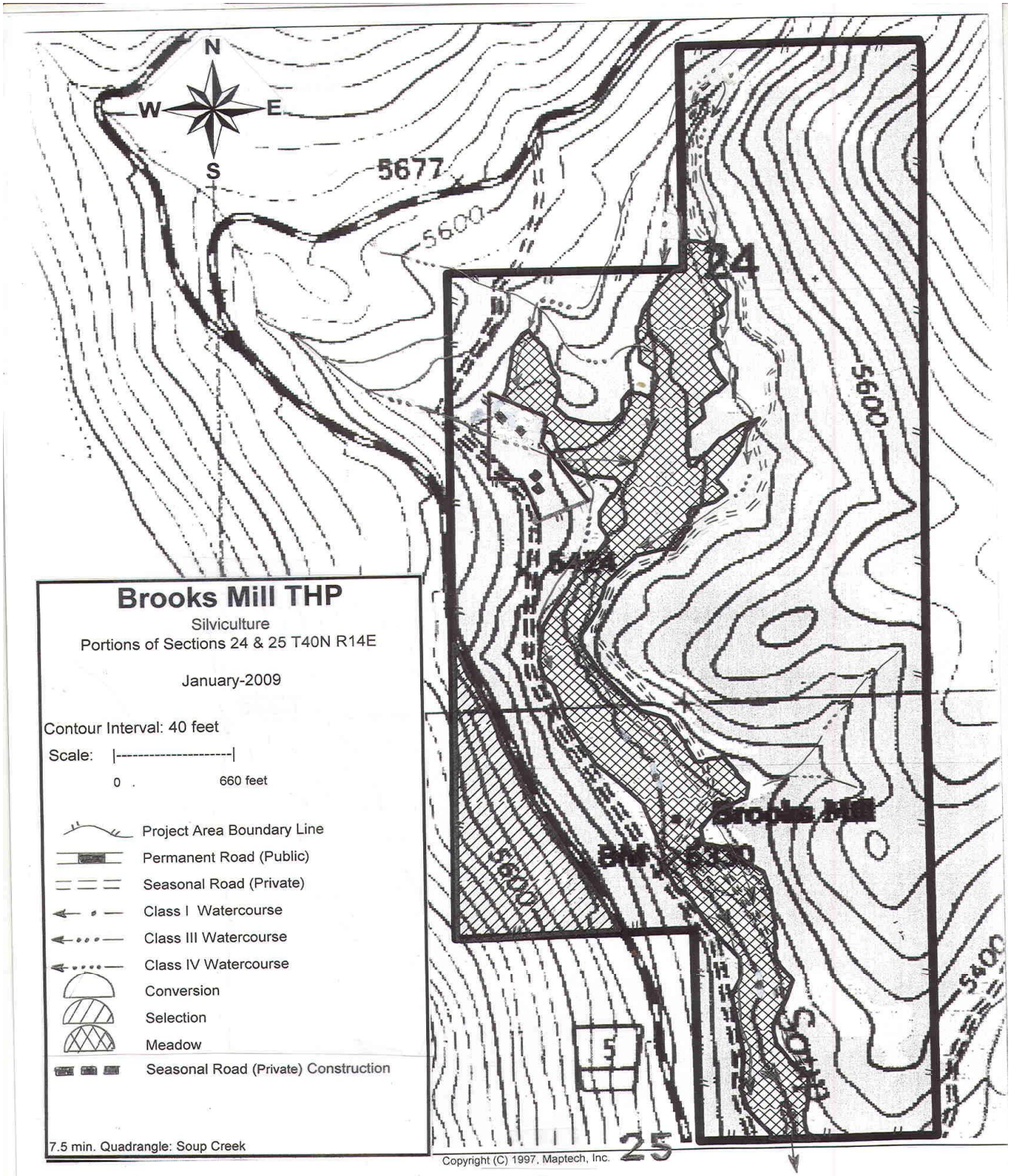
This Timber Harvesting Plan conforms to the rules and regulations of the Board of Forestry and Fire Protection and the Forest Practice Act:

By: _____ _____
(Signature) (Date)

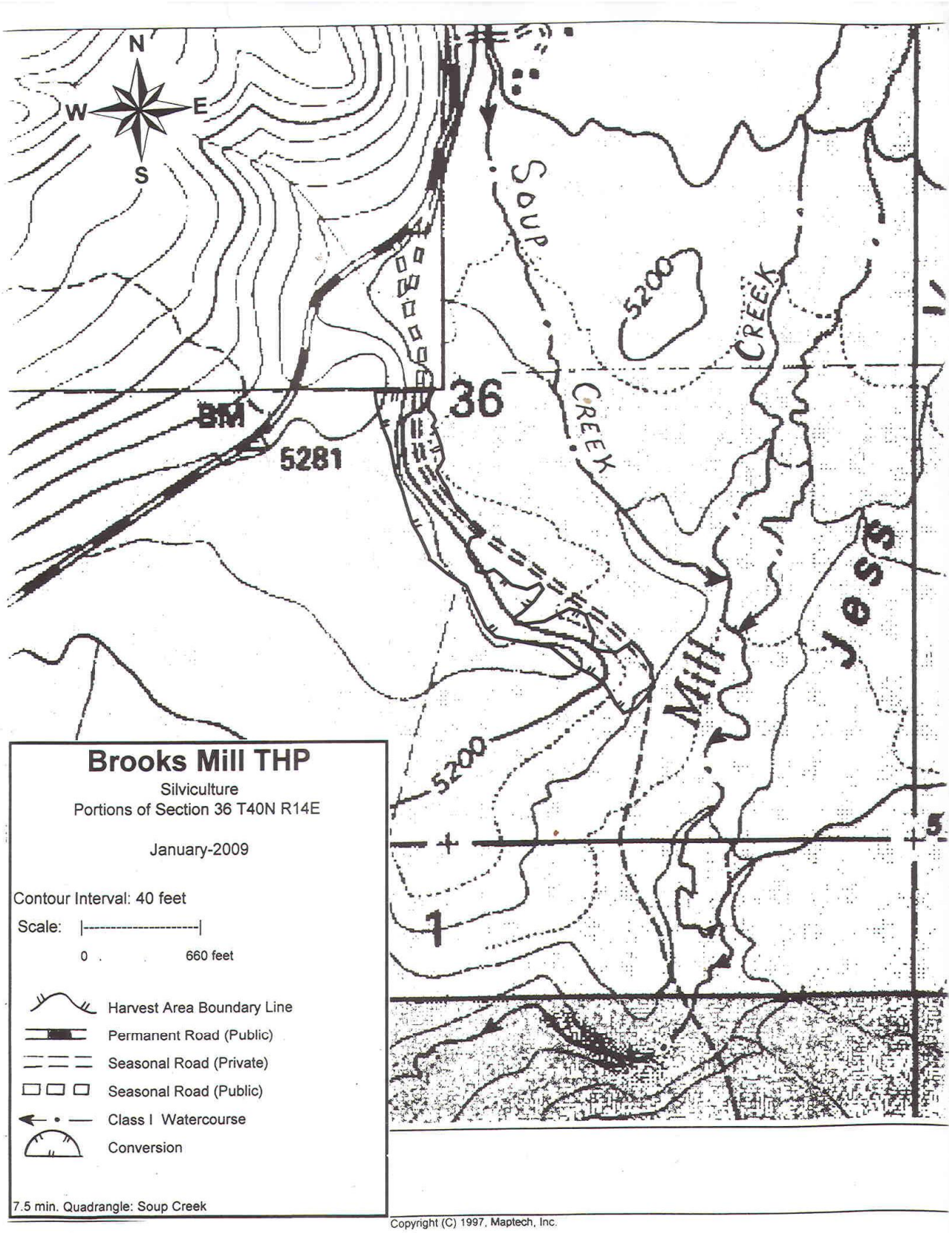
_____ _____
(Printed Name) (Title)

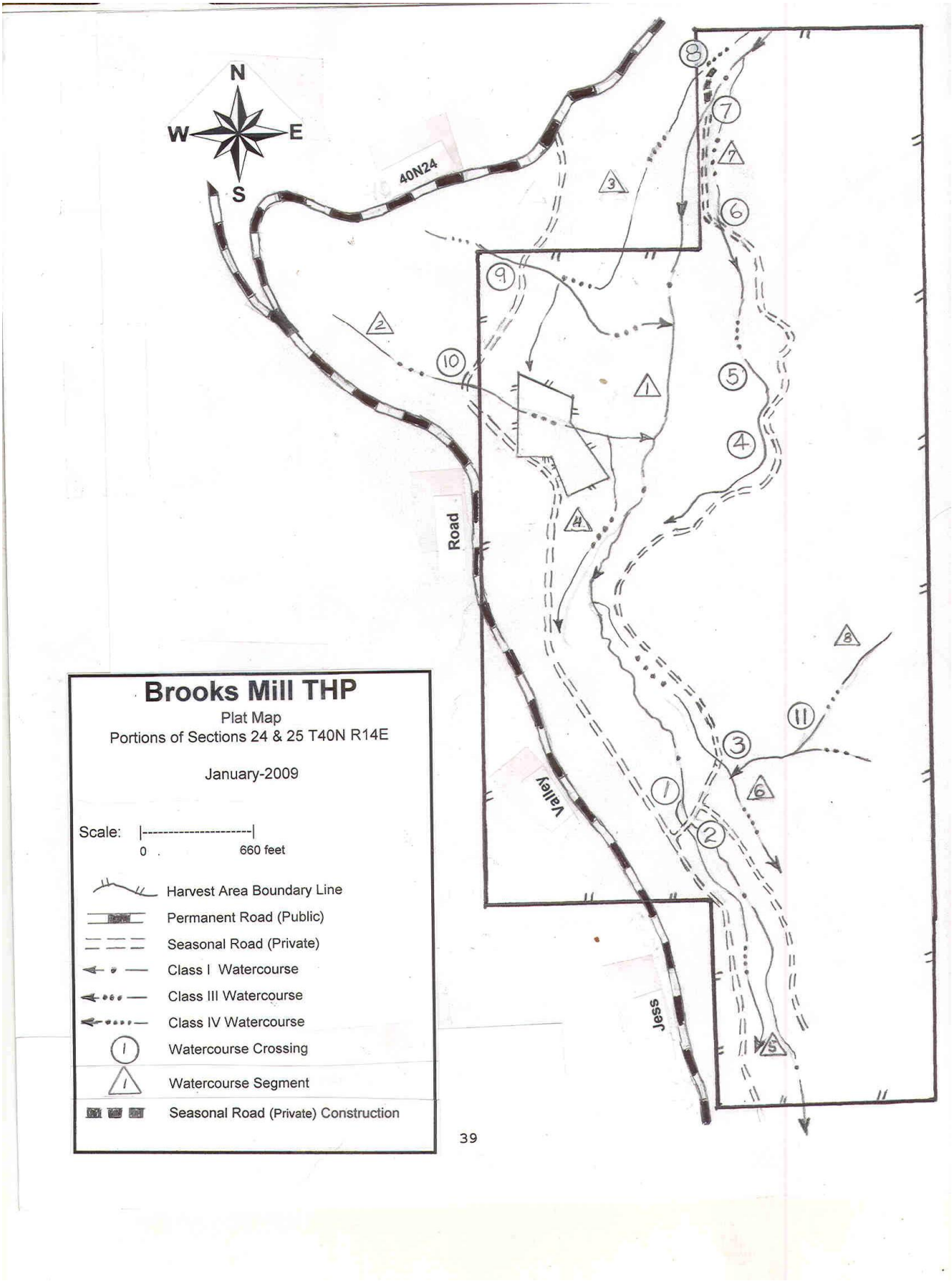
Section II-PLAN OF TIMBER OPERATIONS
(PART OF PLAN)
Brooks Mill THP




N
W
E
S
5677
5600
24
5600
5600
5400
Brooks Mill
BM 5330
5
25
Brooks Mill THP
Silviculture
Portions of Sections 24 & 25 T40N R14E
January-2009
Contour Interval: 40 feet
Scale: |----------|
0 . 660 feet
Project Area Boundary Line
Permanent Road (Public)
Seasonal Road (Private)
Class I Watercourse
Class III Watercourse
Class IV Watercourse
Conversion
Selection
Meadow
Seasonal Road (Private) Construction
7.5 min. Quadrangle: Soup Creek
Copyright (C) 1997, Maptech, Inc.

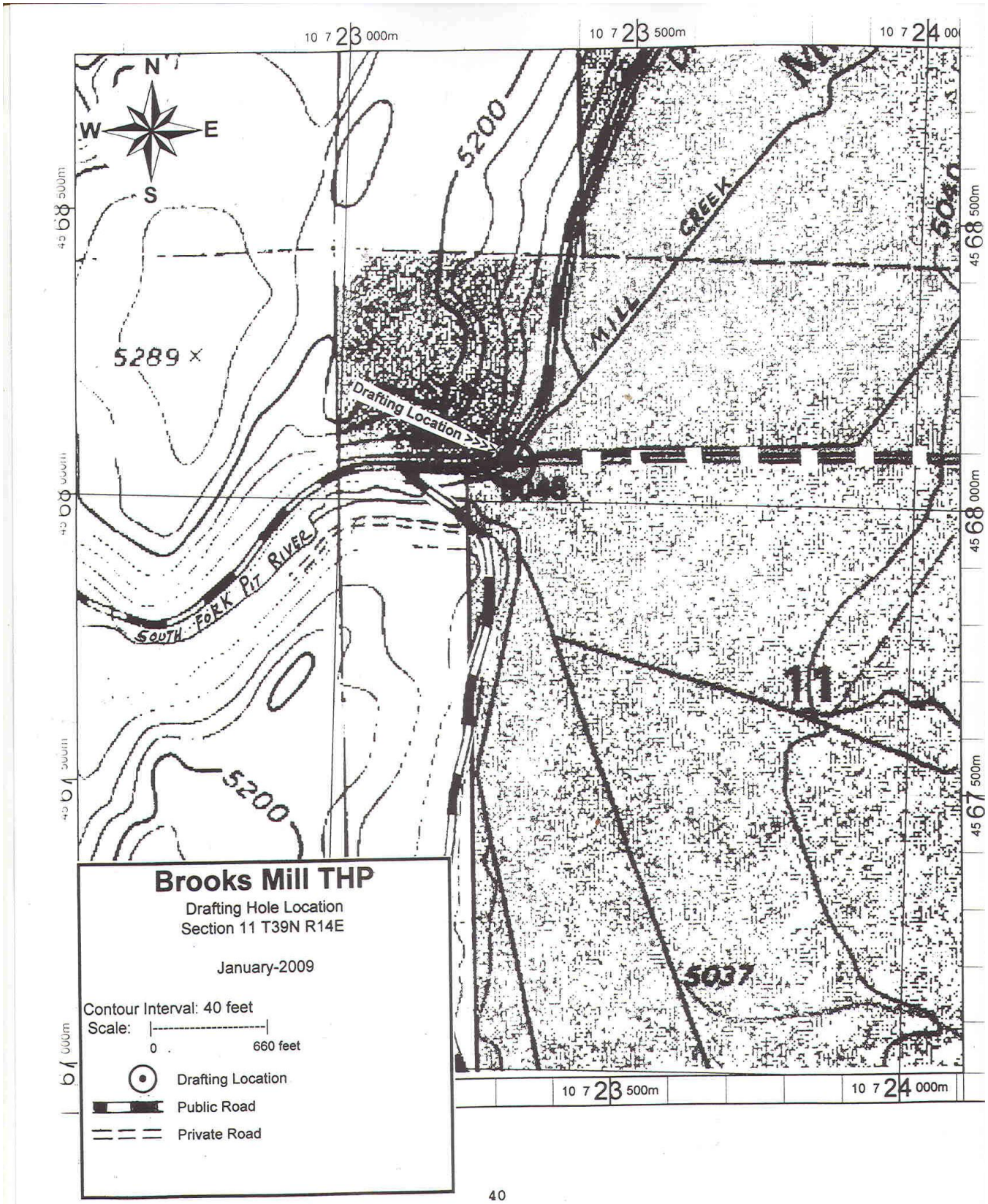
37

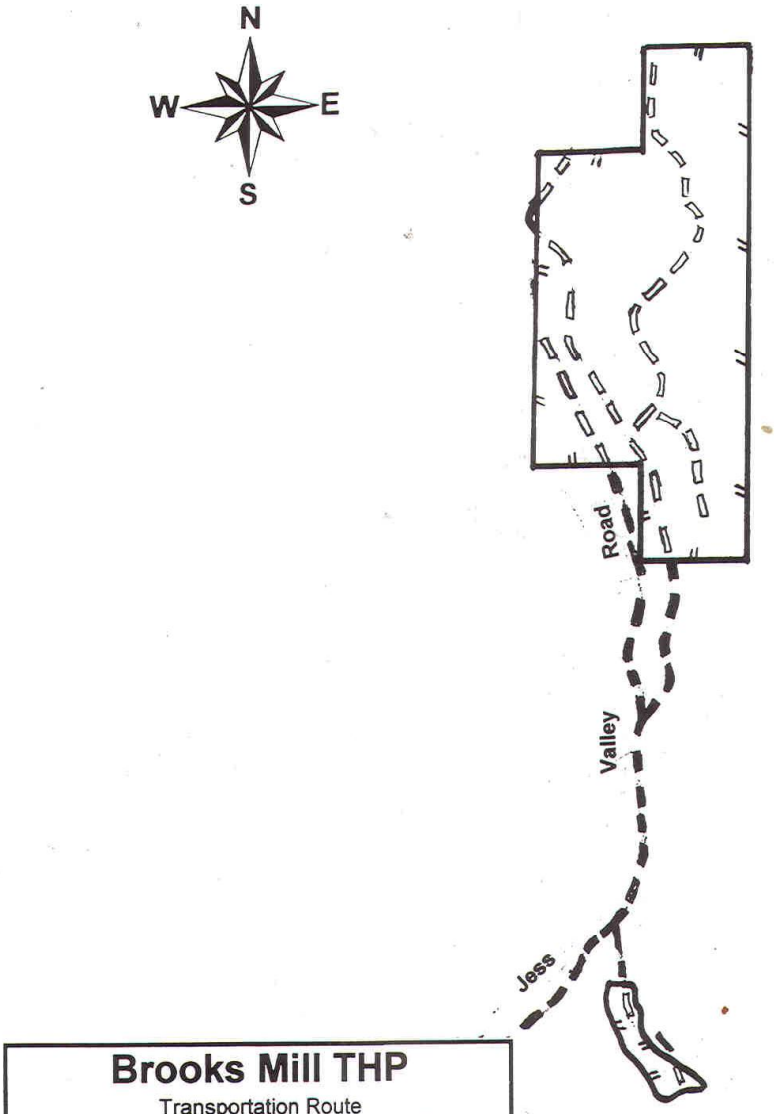



N
W
E
S
40N24
Road
Valley
Jess
Brooks Mill THP
Plat Map
Portions of Sections 24 & 25 T40N R14E
January-2009
Scale: |----------| 0 660 feet
Harvest Area Boundary Line
Permanent Road (Public)
Seasonal Road (Private)
Class I Watercourse
Class III Watercourse
Class IV Watercourse
Watercourse Crossing
Watercourse Segment
Seasonal Road (Private) Construction

39

Section II-PLAN OF TIMBER OPERATIONS
(PART OF PLAN)
Brooks Mill THP





Brooks Mill THP

Transportation Route
Portions of Sections 24, 25, & 36 T40N R14E

January-2009

Scale: |----------|
0 2000 feet

Harvest Area
Harvest Area Haul Road
Haul Road

Section III- Support Documentation

Item 14. Silvicultural methods or treatments allowed by the rules that are to be applied:

The following is a description of the silvicultural prescription used on this Timber Harvest Plan. The stands in this THP are WHR Eastside Pine (EPN) type. The last entry into this area consisted of selection and shelterwood removable prescriptions.

The primary goal of this harvest is to convert 259 acres to pastureland for grazing and use selection on the remaining 17 acres.

Selection (17 acres):

This objective will be accomplished using the selection silvicultural prescription. The pre-harvest stand composition in this unit is ponderosa pine (98%), and white fir/red fir (2%). The post harvest stand composition will have a reduced white fir/red fir component. The current stand dbh ranges from 12-30 in dbh, with growth culmination apparent in some of the larger diameter trees. The silvicultural intent is to remove trees from all diameter sizes.

The selection areas are Site IV and Site V and will meet or exceed the post harvest stocking level 933.2(a)(2)(A)(3)&(4)- 50 square feet of basal area per acre of which at least 12 square feet of basal area per acre will be from seed trees 18 inch dbh or larger. The seed trees must be of full crown, capable of seed production and representative of the best phenotypes available in the pre-harvest stand. Stocking level, as stated, will be met at the completion of operations

Conversion (259 acres):

The landownersôintention is to convert 259 acres from timberland to pastureland. The land ownersôfamily has been raising livestock in Jess Valley for over 70 years. The conversion area is timberland that is adjacent to a meadow that is flood irrigated. The conversion area is currently zoned by Modoc County as Unclassified. The General Plan for these parcels is **AE** (Agriculture- Exclusive Zone**)**, which is suitable for agriculture production. The current stand these stems will be removed in the conversion process. The preharvest stand composition is 95% ponderosa pine, 5% western juniper and ranges from 1inch to 30 inches dbh. .

The Conversion prescription does not require any post harvest stocking. But in consultation with DFG, 25 square feet of basal area per acre averaged over any contiguous 5 acres, with representative trees from different age classes will be retained. This residual stocking will provide perches for goshawks.

Item #32- Biological Resources.

The DFG NDDB reports (2 quad search), the CNPS reports (9 quad search), and input from the USFS were used to identify species and habitats that were found within the assessment area. This was used to identify habitat requirements of the species and determine the likelihood of the habitats occurring within the THP area or in proximity of the THP area.

SPECIES	Species observed within THP boundary	Species observed within BAA area
Birds		
Bald Eagle	No	No
Great Gray Owl	No	No
California Spotted Owl	No	Yes
Northern Goshawk	Yes	Yes
Willow Flycatcher	No	No
Greater SandHill Crane	Yes	Yes
Prairie Falcon	No	Yes
Osprey	No	No
Mammals		
American Badger	No	No
American Martin	No	No
California Wolverine	No	No
Pacific Fisher	No	Yes
Sierra Nevada Red Fox	No	No
Fish		
Redband Trout	Yes	Yes
Plants		
Spiked larkspur	No	No
Doublet	No	No
Prostrate buckwheat	No	No
Boggs Lake hedge-hyssop	No	No
MacDougalôs lomatium	No	No
Adobe lomatium	No	No
Long bluebells	No	No
Cusickôs monkeyflower	No	No
Hairy marsh hedge-nettle	No	Yes

Below are individual species distribution, abundance, and seasonality descriptions plus species identification tips

Birds

Bald Eagle (*Haliaeetus leucocephalus*)

Status: Federal- Not Listed, State Endangered, State Fully Protected.

DISTRIBUTION, ABUNDANCE, AND SEASONALITY : Permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity cos. About half of the wintering population is in the Klamath basin. More common at lower elevations; not found in the high Sierra Nevada. Fairly common as a local winter migrant at a few favored inland waters in southern California. Largest numbers occur at Big Bear Lake, Cachuma Lake, Lake Mathews, Nacimiento Reservoir, San Antonio Reservoir, and along the Colorado River

Bald eagle Identification Tips:

Sexes similar
Length: 32 inches Wingspan: 80 inches
Very large, broad-winged, broad-tailed hawk
Rounded wings
Thick, hooked bill
Plucks fish from water with talons

Adult:
White head and upper neck
White tail
Dark brown body plumage
Yellow bill

Immature:
Dark bill and dark cere
Dark brown body plumage, including head and tail
Variable amounts of white on underwing coverts, belly, and back
White head and tail, and dark underwings are gradually acquired in four years

Similar species:

Turkey Vulture has a tiny, unfeathered head, holds its wings in a dihedral, and has contrastingly paler flight feathers. Golden Eagle can be quite similar to immature Balds, or to adults at a distance but is all dark as an adult and as an immature has white restricted to the bases of the flight feathers and the bases of the tail feathers. The white is confined to crisp patches on the wing and tail, and is not blotchily scattered about underwings coverts as in immature Bald Eagles. Immature Golden Eagles have yellow ceres (beaks) while immature Balds have dark ceres (beaks).

Great Gray Owl (*Strix nebulosa*)

Status: State ï Endangered Federal: None

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: A rarely seen resident at (4500-7500 ft) in the Sierra Nevada from Plumas Co. south to the Yosemite region. Occasionally reported in northwestern California in winter, and in Warner Mtns. in summer (McCaskie et al. 1988).
Although it does not weigh quite as much as either the great horned or snowy owl, the great gray owl has the longest body and the largest wingspan, five feet, of any species of owl in North America. In addition, great grays have a large head with a large, circular facial disk. Plumage is thick and provides insulation for wintering at high elevations and in northern latitudes. The gray and gray-brown feathers are streaked with light and darker grays. This owl exhibits no regular seasonal migration. However, food availability causes movement to higher elevations after the breeding season and to lower elevations in the winter.

Owls attempting to nest probably return to the same nesting area each year. Nests usually are placed in the broken tops of snags or large conifer trees, 35 feet or more from the ground. Nest trees must be large enough to provide a nest for a 30-inch long owl. Normally, two or three eggs are laid. Incubation lasts about 30 days, nestlings remain in the nest about three weeks, and the flightless young remain in the vicinity of the nest for another three to five weeks. These fledglings then stay in the nesting territory for several more months until they can fend for themselves.

During the breeding season, great gray owls are found in Sierra Nevada mixed conifer and red fir forests. Except for birds dispersing, nearly all great gray owls are found in or near meadows within these forest habitats. Important meadow characteristics include meadow size, the height of grass, the portion of the meadow covered by nongrass-forb vegetation, and the livestock grazing pressure. Forests surrounding meadows require a high density of large diameter snags for nests and a high canopy closure to provide cover and a cooler sub-canopy microclimate. All 15 of the known breeding sites and 71 percent of the sites with multiple observations come from Mariposa and Tuolumne counties in the Yosemite area. Sites with multiple observations also come from Alpine, Calaveras, Fresno, Plumas, Sierra, and Tulare counties. This pattern indicates that great gray owls are mainly distributed in the scattered meadow-mature forest zone on the west slope of the central Sierra Nevada.

Great gray owls also have been observed in 13 other counties, from the southern Sierra Nevada to Del Norte, Humboldt, Siskiyou, Shasta, and Modoc counties across the northern portion of the State. Owls seen in this part of the State are probably vagrants from populations in Oregon. With few exceptions, those in other Sierran counties are probably individuals wandering from the main population.

There has been no recent change in the impacts to great gray owls. The loss of mature forest habitat for nesting and the degradation of montane meadows by livestock grazing remain the major sources of habitat loss. There are no conservation management plans addressing the great gray owl. The majority of currently known nesting sites are in Yosemite National Park and thus are managed through the natural resource management of the park. USFS monitors sites on or near their lands during planning for timber harvest or other projects.

Great Grey Owl Identification Tips:

Sexes similar

Length: 22 inches Wingspan: 60 inches

Very large, nocturnal, predatory bird

Large, rounded head

Yellow eyes

Gray facial disks with darker rings

Gray upperparts with paler barring

Pale underparts with large, dark irregular streaks

Similar species:

The Great Gray Owl is larger and grayer than other owls and lacks ear tufts

Northern Goshawk (*Accipiter gentilis*)**:**

Status: DFG Species of Concern-

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: Breeds in North Coast Ranges through Sierra Nevada, Klamath, Cascade, and Warner Mts., and possibly in Mt. Pinos and San Jacinto, San Bernardino, and White Mts. Remains yearlong in breeding areas as a scarce to uncommon resident. Prefers middle and higher elevations, and mature, dense conifer forests. Casual in winter along coast, throughout foothills, and in northern deserts, where it may be found in pinyon-juniper and low elevation riparian habitats.

Northern Goshawk Identification Tips:

Length: 19 inches, Wingspan: 42 inches
Sexes similar, but females much larger
Medium-sized, broad-winged, long-tailed hawk
Short, dark, hooked beak
Rounded wings
Long tail, rounded at tip
Flies with several flaps and short glide, also soars
Long, very thick tarsi (part of foot before the toe), appears short at rest

ADULT:
Red eye
Blackish head and face with bold white supercilium
Grey back and upperwings
Pale gray chin, throat, breast, underwing coverts and belly finely vermiculate
White undertail coverts
Tail dark blue-gray above and pale below, barred with dark bands
Flight feathers dark blue-gray above and pale below, barred with black

IMMATURE:
Yellow eye
Brown above and heavily streaked below.
Back with some white or cinnamon streaks and white spots.
Pale eyebrow stripe usually visible on brown head.
Tail dark brown with jagged dark bars.
Underparts whitish with broad dark brown streaks.

Prairie Falcon (*Falco mexicanus*)

Status: CDF&G Species of Special Concern.

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: an uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner Coast Ranges and Sierra Nevada. Distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. Not found in northern coastal fog belt, or along the coastline.

Identification tips for Prairie Falcon are:

1) Length- 16 inches, Wingspan ï 40 inches;
2) short, dark, hooked beak;
3) dark brown cap and cheek;
4) wingtips fall a couple inches short of tail on perched birds;
5) pale supercilium and patch behind eye;
6) pale face and throat with thin, dark mustache mark;
7) dark axillars and underwing coverts;
8) brown back with paler brown fringes;
9) brown tail with very faint darker bands

California Spotted Owl (*Strix occidentalis occidentalis*)

Status: State listed as a Species of Special Concern

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: An uncommon, permanent resident in suitable habitat. In northern California, resides in dense, old-growth, multi-layered mixed conifer, redwood, and Douglas fir habitats, from sea level up to approximately 2300 m (0-7600 ft). Uses dense, multi-layered canopy cover for roost seclusion. Roost selection appears to be related closely to thermoregulatory needs; intolerant of high temperatures. Roosts in dense overhead canopy on north facing slopes in summer. In winter, roosts in oak habitats. In northern regions of the state, daytime roosts averaged 165 m (549 feet) from water.

Spotted owls are medium-sized brown owls. They have brown eyes, round heads without ear tufts, and white spots on their heads, necks, backs, and underparts. They have white and light brown bars on their wings and tail. Adults range from 16 to 19 inches (41 to 48 cm) in length, and have wingspans of 42 to 45 inches (107 to 114 cm). Females are usually larger than males, with females weighing 19 to 27 ounces (535 to 775 grams) and males weighing 17 to 24 ounces (470 to 685 grams)

California Spotted Owl Identification Tips:

Length: 16 inches Wingspan: 42 inches

Large, nocturnal, predatory bird

Large, rounded head

Dark eyes

Brown facial disks with dark border

Rich brown upperparts with white spots

White underparts with brown cross-shaped markings

Sexes similar

Similar species:

The Spotted Owl is similar to the Barred Owl but has cross-shaped markings on the underparts where the Barred Owl is alternately barred on the breast and streaked on the belly. Barred Owls are grayer than Spotted Owls. Great Gray Owl is much larger with yellow eyes. Great Horned and Long-eared Owls have ear tufts.

Willow Flycatcher (*Empidomax traillii*):

Status: California Endangered-

DISTRIBUTION, ABUNDANCE, AND SEASONALITY : A rare to locally uncommon, summer resident in wet meadow and montane riparian habitats at 600-2500 m (2000-8000) in the Sierra Nevada and Cascade Range. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows (Serena 1982). May still nest elsewhere in lowland California, as in San Diego Co., but definite records are lacking. Common summer (mid-August to early September) migrant at lower elevations, primarily in riparian habitats throughout the state exclusive of the North Coast (Grinnell and Miller 1944, Gaines 1977a, 1977b, Ramsen 1978, McCaskie et al 1979, Garrett and Dunn 1981). Populations are most numerous where extensive thickets of low, dense willows edge on wet meadows, ponds, or backwaters. Individuals nest and roost on low, exposed branches of dense willow thickets and make short trips for prey.

Willow flycatcher identification tips:

Length: 4.75+ inches
Small flycatcher
Triangular head
Indistinct eye ring
Lower mandible orange
Brownish-olive upperparts
Breast has olive wash
Whitish throat, belly and undertail coverts
Wing bars
Formerly con-specific with Alder Flycatcher and Traillôs Flycatcher
Breeding habitat is scrubby areas-for example: bogs, abandoned fields

Greater Sandhill Crane (*Grus tabida*):

Status: California Threatened, Fully Protected-

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: The Greater Sandhill Crane occurs in California. Historically, was a fairly common breeder on the northeastern plateau, now reduced greatly in numbers, breeds only in Siskiyou ,Modoc, and Lassen cos, and in Sierra Valley, Plumas and Sierra cos. In summer this species occurs in and near wet meadow, shallow lacustrine, and fresh emergent wetland habitats. It winters primarily in the Sacramento and San Joaquin valleys from Tehama Co. south to Kings Co., where it frequents annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open, emergent wetlands. It prefers relatively treeless plains.

Greater Sandhill Crane Identification Tips:

Length: 37 inches, wingspan, 80 inches
Large, long-legged, long-necked birds
Long pointed bill
Holds neck straight both at rest and in flight, not tucking it in like herons do
Dark gray legs extended in flight
Long, fluffy tertials droop down over tail and primaries

Adult:

Dark bill
Unfeathered red crown and lores
Entirely grey plumage , that often becomes stained with rust or brown, especially about the back and wings
Whitish cheeks and chin

Juvenile:

Feather crown
Grey-brown plumage mottled with cinnamon

Similar species:

All herons tuck their necks in an ñSòcurve while flying and lock the long, fluffy tertials and red crown. The very rare Whooping Crane is white overall with black primaries and a different head pattern.

Osprey (*Pandion haliaetus*)

Status: State Species of Special Concern

DISTRIBUTION, ABUNDANCE, AND SEASONALITY : breeds in northern California from Cascades Ranges south to Lake Tahoe, and along the coast south to Marin Co. Regular breeding sites include Shasta Lake, Eagle Lake, Lake Almanor, other inland lakes and reservoirs, and northwest river systems. Breeding population estimated in 1975 at 350-400 pairs in northern California (Henny et al 1975); numbers apparently increasing in recent years. An uncommon breeder along southern Colorado River, and uncommon winter visitor along the coast of southern California (Garrett and Dunn 1981). Associated strictly with large, fish-bearing waters, primarily in ponderosa pine through mixed conifer habitats.

Identification Tips:

Length: 22 inches Wingspan: 54 inches
Large, narrow-winged hawk
Flies on flat wings with distinct kink at elbow
Wings taper to a rounded tip
Short hooked beak
White cap
Dark brown eyeline broadening behind eye
Dark brown nape, back and upperwings
Wings from below: flight feathers white barred with black, undersecondary coverts white and underprimary coverts black producing rectangular black mark at wrist
White chin, throat, breast and belly
Brown tail has a number of white bands
Hovers and then plunges into water after fish

Adult male:
Underparts entirely white

Adult female:
Dark necklace of streaks on throat

Immature:
White tips to dark back feathers

Similar species:
Unmarked white belly, wing shape, and flight style make the Osprey instantly recognizable even at a distance.

MAMMALS

California Wolverine (*Gulo gulo)*:

Status: California Threatened

DISTRIBUTION, ABUNDANCE, AND SEASONALITY

A scarce resident of North Coast mountains and Sierra Nevada. Sightings range from Del Norte and Trinity cos. east through Siskiyou and Shasta cos, and south through Tulare Co. A few possible sightings occur in the north coastal region as far south as Lake Co. Habitat distribution in California is poorly known for the North Coast and northern Sierra Nevada. In north coastal areas, has been observed in Douglas-fir and mixed conifer habitats, and probably uses red fir, lodgepole, wet meadow, and montane riparian habitats. Most sightings in this region range from 500-1500 m (1600-4800 ft). In the northern Sierra Nevada, have been found in mixed conifer, red fir, and lodgepole habitats, and probably use subalpine conifer, alpine dwarf-shrub, wet meadow, and montane riparian habitats. Elevations in the northern Sierra Nevada mostly fall in the range of 1300-2300 m (4300-7300 ft). Habitats used in the southern Sierra Nevada include red fir, mixed conifer, lodgepole, subalpine conifer, alpine dwarf-shrub, barren, and probably wet meadows, montane chaparral, and Jeffrey pine. Elevations in the southern Sierra Nevada mostly are from 2000-3400 m (6400-10,800 ft). May travel extensively. There are indications that wolverines may be increasing in California (Grinnell et al. 1937, Ingles 1965, Yocom 1973, 1974, Johnson 1977, Schempf and White 1977, California Department of Fish and Game 1980a).

In the case a **California wolverine** den is discovered:
-the LTO shall cease operations within 0.25 miles of the discovered den site
-the responsible plan RPF should be notified immediately to advise on mitigation responses.
-once the listed species is identified, DFG and CDF shall be notified, 939.2,
-an amendment that shall be considered a minor amendment to the THP shall be filed reflecting such protection as is agreed between the operator and the Director after consultation with DFG

American Badger (*Taxidea taxus*):

Status: DFG Species of Special Concern-

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: an uncommon, permanent resident found throughout most of the state, except in the northern North Coast area (Grinnell et al 1937). Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.

The badger is a somewhat large mustelid that has evolved for a semi-fossorial life. It has powerful, short legs and claws measuring 1 to 1 and 1/2 inches which aid in digging; the hind feet have shovel like claws. The body is stout and flat, wider than high. Coloration of its shaggy coat is a silver gray with the head being dark with a white stripe that often extends down the back. The snout of the badger is slightly upturned and the eyes are small with nictating membranes, an adaptation for its fossorial lifestyle. The skin of the badger is loose, particularly across the chest, shoulders, and back. The tail is relatively short, moderately furred and somewhat yellow. The weight of adults can range from 12 to 24 pounds with the males weighing more on the average

In the case an **American badger** den is observed:
-the LTO shall cease operations within 660 feet of the discovered den site
-the responsible plan RPF should be notified immediately to advise on mitigation responses.
-once the listed species is identified, DFG and CDF shall be notified, 939.2,
-an amendment that shall be considered a minor amendment to the THP shall be filed reflecting such protection as is agreed between the operator and the Director after consultation with DFG

Pacific fisher (*Martes pennanti pacifica*):

Status: Candidate for listing under California Endangered Species Act

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: an uncommon permanent resident of the Sierra Nevada, Cascades, and Klamath Mts; also found in a few areas in the North Coast Ranges (Grinnell et al, 1937). Occurs in intermediate to large-tree stages of coniferous forests and deciduous-riparian habitats with a high percent canopy closure (Schempf and White 1977).

The Pacific fisher is a mustelid in the weasel family, It is about the size of a household cat, and is stocky, dark brown, and has a long bushy tail.

Section 749.5, Title 14, CCR, Incidental Take of Pacific Fisher (Martes pennanti) During Candidacy Period. This regulation authorizes the taking of Pacific fisher (Martes pennanti), subject to certain terms and conditions, during the speciesô candidacy under the California Endangered Species Act (Fish and Game Code, Section 2050 et seq.).

(a) Take Authorization.
The Commission authorizes the take of Pacific fisher during the candidacy period subject to the terms and conditions herein.

(1) Forest Practices and Timber Harvest.
Incidental take of Pacific fisher is authorized for otherwise lawful timber operations. For purposes of this authorization, an otherwise lawful timber operation shall mean a timber operation authorized or otherwise permitted by the Zberg Nejedly Forest Practice Act (Public Resources Code, Section 4511 et seq.), the Forest Practice Rules of the Board of Forestry, which are found in Chapters 4, 4.5, and 10, of Title 14 of the California Code of Regulations, or other applicable law. The Zberg Nejedly Forest Practice Act and Forest Practice Rules can be found at the following website: http://www.fire.ca.gov/resource_mgt/resource_mgt_forestpractice.php.

Sierra Nevada Red Fox (*Vulpes vulpes necator*):

Status: California Threatened-

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: The native subspecies V. v. necator is found in the Cascades in Siskiyou Co., and from Lassen Co. south to Tulare Co. Sierra Nevada populations may be found in a variety of habitats, including alpine dwarf-shrub, wet meadow, subalpine conifer, lodgepole pine, red fir, aspen, montane chaparral, montane riparian, mixed conifer, and ponderosa pine. Jeffrey pine, eastside pine, and montane hardwood-conifer also are used. Most sightings in Sierra Nevada are above 2200 m (7000 ft), ranging from 1200-3700 m (3900-11,900 ft) (Schempf and White 1977). Hunts small and medium sized mammals, ground squirrels, gophers, mice, marmots, woodrats, pikas, and rabbits. Other vertebrates, insects, carrion, fruits, and earthworms used occasionally. Hunts in meadows, fell-fields, grasslands, wetlands, and other open habitats. Caches food. Uses dense vegetation and rocky areas for cover and den sites. Den sites include rock outcrops, hollow logs and stumps, and burrows in deep, loose soil. May move pups to new den several times. Sierra red foxes move downslope in winter into ponderosa pine and mixed conifer, upslope in summer to lodgepole pine, subalpine conifer, alpine dwarf-shrub, and red fir habitats (Ziener et al. 1990).The Sierra Nevada red fox is one of 10 recognized North American subspecies of Vulpes. The Sierra Nevada red fox is distinguished from members of the introduced lowland population of red foxes by its slightly smaller size and darker colored fur. They inhabit remote areas of the State where chance encounters with humans are uncommon. Relatively little is known of the life history of the Sierra Nevada red fox, but it is assumed that its habits are similar to those of other red foxes insofar as choice of dens, hunting tactics, and breeding behavior are concerned. Sightings of the subspecies is known to inhabit vegetation types similar to those used by the marten and wolverine. Sightings of the subspecies have been reported from the 5,000 to 7,000 foot elevation range with extremes placed at 3,900 feet in Yosemite Valley and 11,900 feet at Lake South America in the southern Sierra Nevada. The range is described as the northern California Cascades eastward to the northern Sierra Nevada and then south along the Sierran crest to Tulare County. Threats to the Sierra Nevada red fox are unknown.

In the case a **Sierra Nevada Red Fox** is observed **:**
-LTO will be provided with instructions and education on identifying red fox, sign, and denning areas (pictures and identification).
-During timber operations, if a red fox is observed within the plan area boundary, operations within 0.25 mile shall cease until after the critical breeding period (February 1 to June 30) or consultation with DFG

American Marten (*Martes Americana*):

Status: California Species of Special Concern

DISTRIBUTION, ABUNDANCE, AND SEASONALITY-Uncommon to common, permanent resident of North Coast regions and Sierra Nevada, Klamath, and Cascades Mts. Optimal habitats are various mixed evergreen forests with more than 40% crown closure, with large trees and snags. Important habitats include red fir, lodgepole pine, subalpine conifer, mixed conifer, Jeffrey pine, and eastside pine (Grinnell et al. 1937, Schemof and White 1977, Clark et al. 1987).

Use cavities in large trees, snags, stumps, logs, or burrows, caves, and crevices in rocky areas for denning cover. Less commonly will den in woodpiles, cabins, and other human artifacts. Also may den under snow near logs, stumps, or other objects.

In the case an **American marten** den is observed:
-the LTO shall cease operations within 0.25 miles of the discovered den site
-the responsible plan RPF should be notified immediately to advise on mitigation responses.
-once the listed species is identified, DFG and CDF shall be notified, 939.2,
-an amendment that shall be considered a minor amendment to the THP shall be filed reflecting such protection as is agreed between the operator and the Director after consultation with DFG

Goose Lake Redband Trout (*Onchynchus mykiss newberrii*)

Status: Class 1. Species of special concern-California

Description: The following description is based on the Sheepheaven Creek population, McCloud Redband Trout (Hoopaugh 1974, Gold 1977) that seems to have a narrower range of characters than is found throughout the range of the subspecies. Behnke (1992), however, considers this population to best represent the subspecies because it is unlikely to have had any history of hybridization with introduced rainbow trout. Overall body shape of this redband trout is similar to the ñtypicalò trout shape as exemplified by rainbow trout. It has a yellowish to orange body color with a brick-red lateral stripe. The dorsal, anal, and pelvic fins are white tipped. Adults retain parr marks. Gill rakers number from 14-18 (average=16), which is the lowest number known from any rainbow trout population (Behnke 1992). Pyloric caeca number 29-42, which is also low. However, the number of scales along the lateral line (153-174) and above the lateral line (33-40) are greater than in most rainbow trout. Pelvic fin rays are 9-10 and branchiostegal rays range from 8-11. Many, but not all, of the trout have basibranchial teeth, a characteristic normally associated with cutthroat trout.

Distribution: Goose Lake redband trout are present in most of the major tributaries of Goose Lake, spawning and resident distribution is highly fragmented and limited to headwater and some mid-order reaches. Historically, all streams maintained hydrologic connection to Goose Lake and other streams. Data describing the abundance of constituent populations of the Goose Lake SMU over the last 30 years are not available. The major concern in the viability of the Redband Trout is the fluctuations of stream flows do to drought conditions and the concerns with water temperature. Do to these intermittent stream flows.

The only potential impact to Goose Lake Red Band Trout will be at the rocked ford road crossing

across Soup Creek. The crossing will be used during the low water summer months and only for approximately two days. The likelihood of any significant impact is low due to the low stream flow and the low probability of fish presence.

Plants

The species listed below were either 1) observed within the THP or BAA, 2) listed as federal or state threatened, endangered, or species of concern.

Common name (scientific name): Status-Habitat- Likely occurrence in THP

Community:	Habitat:
Great Basin scrub (GBScr)	Meadows and seeps (Medws)
Pinyon-Juniper woodland (PJWld)	Bogs and fens (BgFns)
Lower montane coniferous forests (LCFrs)	Marshes and swamps (MshSw)
Upper montane coniferous forests (UCFrs)	Vernal pools (VnPls)
Subalpine coniferous forest (SCFrs)	Alpine boulder, rock fields (AlpBR)

Common name (*scientific name*)**: Status-**Habitat**- Likely occurrence in THP-**Blooms

Spiked larkspur (*Delphinium stachydeum*): **CNPS List 2.3-** edges/rocky, UCFrs, GBScr- **Mod** - Jun-Aug

Doublet (*Dimeresia howellii*): **CNPS List 2.3**-Volcanic, xeric, LCFrs, PJWld - **Mod**- May ï Sep

Prostrate buckwheat (*Eriogonum prociduum*)**: CNPS 1B.2-** GBScr**,** PJWld, UCFrs, volcanic- **Moderate-** May-Aug

Boggs Lake hedge-hyssop (*Gratiola heterosepala*): **CNPS List 1B.2- state endangered** ï lake margins, MshSw, VnPls. clay- **Low** - Apr-Aug

MacDougal's lomatium (*Lomatium foeniculaceum* var. *macdougalii*):
CNPS 2.2- volcanic soils, GBScr, PJWld, LCFrs- **Low**- Apr-Jul

Adobe lomatium (*Lomatium roseanum*): **CNPS 1B.2**-rocky openings in GBScr, LCFrs-**Mod**-Jun-Jul

Long bluebells (*Mertensia longiflora*): **CNPS List 2.2 –** open sagebrush LCFrs, GBSrs- **Low**- Apr-Jun

Cusickii monkeyflower (*Mimulus cusickii*)**: CNPS Lists 2.3**- roadsides, gravelly, scree, volcanic LCFrs, GBScr- **Mod**- May-Aug

Hairy march hedge-nettle (*Stachy palustris ssp. pilosa***): CNPS 2.3 –** GBScr, Medws **-Low-**Jun-Aug

Guidelines for plant species discovered within the harvest area:
1) If any sensitive plants are identified during harvest operations, the plants will be flagged, mapped, and a 50-foot zone of no operations will be established around plant occurrences.
2) CDF and the RPF shall be notified within 24 hours.
3) In consultation with CDF&G and CDF, equivalent or more effective protection measures may be developed and amended into the THP.
For these reasons, the RPF believes the potential adverse impacts to plant communities will be minimal.

Adjacent landowners within 300 feet of the plan boundary are listed below:

United States Forest Service
Modoc National Forest
800 West 12TH Street
Alturas, CA. 96101

Harris, Harold J. & Phyllis A.
Star Route,
Lake City, CA 96115

Keller, Henry & Lillian G.
13116 Pellandini Rd
Galt, CA 95632

Bradshaw, July L. & Keller, David J.
7504 Bama Ct.
Sacramento, Ca. 95828

ANALYSIS OF ALTERNATIVES:

The main objective of the timberland owner is to provide a reasonable return on the investment by managing the property as commercial timberland on the 17 acre area. On 259 acres, the owner wishes to convert the timberland to pasture for livestock grazing. The timberland owner desires, to be a good steward of the land, while achieving reasonable economic performance. Additionally, the landowner desires to reduce the risks of fire. To meet these goals in the future, it is essential that good forest health is maintained and the spacing between trees in the stands increases. The risk of stand replacement fires is greatly reduced in a healthy, well-spaced stand. The following is a list of possible alternatives for managing this timberland.

1) NO PROJECT ALTERNATIVE: The NO TIMBER HARVEST alternative within the selection portion of the THP would result in a decrease of forest health and an increase in the fire hazard. Stagnation would occur and the risk of stand replacement fires would increase with each year of no management. The timberland owner would have no economic return from the investment. In the conversion area, the no project alternative would not result in the conversion of the timberland to pastureland. This alternative was rejected as not meeting the objectives of the landowner or of good forest management.

2) PROJECT AS PROPOSED ALTERNATIVE: This alternative was selected as best meeting the landownerôs objectives. This proposal would have 17 acres of selection that would improve forest health, reduce fire hazard, and provide for the growth of quality timber. The 259 acres of the conversion area will add additional grazing land for the landowner. This alternative would provide employment opportunities for the local community, taxes to local government and a reasonable economic return to the landowner.

3) ALTERNATIVE LAND USES: Alternative land uses were considered. These include but are not limited to: designating the area as a recreational preserve, firewood cutting, hunting, camping and sightseeing. The land in this project area is zoned Unclassified**.** The general plan for these parcels is **Agriculture Exclusive** (**AE**). The purpose of an AE zone is to protect agriculture as an integral part of the countyôs economy and lifestyle by limiting incompatible land uses and reserving land that have a combination of size, water availability, soils and location suited to agriculture as defined in the General Plan. The AE zone is consistent with the exclusive agriculture general plan designation and may be applied to other high quality lands that are integral part of a ranch or farm operation, provided there are no conflicts with the general plan. Compatible uses such as hiking, sightseeing, and hunting will be unaffected by this THP and will continue at levels similar to present. Non-compatible uses such as designating the area, as a wildlife preserve or subdivision are unacceptable for this land.

4) TIMING OF THE PROJECT ALTERNATIVES: Changing the time of the project to some later date was rejected as an undetermined amount of decadent timber may be lost due to mortality, also the risk of wild fire is high. Postponement would disrupt the opportunity for the conversion to grazing and not provide the economic benefits the landowner needs to meet annual cash flow requirements that sustain the ranch.

5) ALTERNATIVE SITE: This alternative was rejected because of the need to treat this area which is adjacent to the ranch, or within close proximity to the ranch.

6) PUBLIC ACQUISITION ALTERNATIVE: The landowner does not wish to sell or trade the property on the open market, the adjacent property has been in the landowner's family for over 70 years. The Federal Government and non-profit organizations do not buy or trade land unless some significant value is to be protected. This site offers no unique or significant value that would attract a willing buyer or trader. This THP will not alter significant land use values present on this property, therefore, it will not affect potential future selling or trading activities, and therefore, the public acquisition alternative does not provide a better option for land use than the preferred alternative.

ESTIMATED SURFACE SOIL EROSION HAZARD WORKSHEET

STATE OF CALIFORNIA
BOARD OF FORESTRY

I. SOIL FACTORS

A. SOIL TEXTURE	FINE	MEDIUM	COARSE	**A**	**B**		**A**	**Smarts- Mascamp complex**
1. DETACHABILITY	Low	Moderate	High				**B**	**Smarts- Mascamp-Demasters complex**
Rating	1 ï 9	10 - 18	19 - 30	**23**	**22**			
2. PERMEABILITY	Slow	Moderate	Rapid					
Rating	5 ï 4	3 - 2	1	**2**	**2**			

B. DEPTH TO RESTRICTIVE LAYER OR BEDROCK

	Shallow	Moderate	Deep			
	1ò-19ò	20ò-39ò	40ò-60ò			
Rating	15 ï 9	8 - 4	3 - 1	**8**	**6**	

C. PERCENT SURFACE COARSE FRAGMENTS GREATER THAN 2MM IN SIZE INCLUDING ROCKS OR STONES

	Low	Moderate	High				**FACTOR RATING BY AREA**		
	(-) 10 - 39%	40 - 70%	71 - 100%						
Rating	10 - 6	5 - 3	2 - 1	**4**	**4**		**A**	**B**	
						SUBTOTALS➔	**37**	**34**	

II. SLOPE FACTOR

Slope	5 - 15%	16 - 30%	31 - 40%	41 - 50%	51 - 70%	71 - 80%+			
Rating	1 - 3	4 - 6	7 - 10	11 - 15	16 - 25	26 - 35	**7**	**8**	

III. PROTECTIVE VEGETATIVE COVER REMAINING AFTER DISTURBANCE

	Low	Moderate	High			
	0 - 40%	41 - 80%	81 - 100%			
Rating	15 - 8	7 ï 4	3 ï 1	**5**	**5**	

IV. TWO-YEAR, ONE - HOUR RAINFALL INTENSITY (Hundredths Inch)

	Low	Moderate	High	Extreme			
	(-)30 - 39	40 - 59	60 - 69	70 ï 80			
Rating	1 - 3	4 - 7	8 - 11	12 ï 15	**4**	**4**	
				TOTAL SUM OF FACTORS	**53**	**51**	

EROSION HAZARD RATING

< 50	50 - 65	66 - 75	> 75			
Low (L)	Moderate (M)	High (H)	Extreme (E)			
			THE DETERMINATION IS ====➔	**M**	**M**	

This Page is Blank.

SECTION IV – CUMULATIVE IMPACTS

Brooks Mill THP

STATE OF CALIFORNIA
BOARD OF FORESTRY

CUMULATIVE IMPACTS ASSESSMENT

(1) Do the assessment area(s) of resources that may be affected by the proposed project contain any past, present, or reasonably foreseeable probable future projects?

Yes X No __

Note: The assessment areas can be described on a map or in narrative.

If the answer is yes, identify the project(s) and affected resource subject(s).

Refer to pages 75-76 for past and present projects within the watershed assessment area.

(2) Are there any continuing, significant adverse impacts from forestland use activities that may add to the impacts of the proposed project?

Yes_____ **No X**

If the answer is yes, identify the activities and affected resource subject(s).

(3) Will the proposed project, as presented, in combination with past, present, and reasonably foreseeable probable future projects identified in items (1) and (2) above, have a reasonable potential to cause or add to significant cumulative impacts in any of the following resource subjects?

Note: Projects go beyond timber harvesting operations.

		Yes after Mitigation (a)	No after Mitigation (b)	No reasonably potential significant effects (c)
1.	Watershed	_____	_____	**X**
2.	Soil Productivity	_____	_____	**X**
3.	Biological	_____	_____	**X**
4.	Recreation	_____	_____	**X**
5.	Traffic	_____	_____	**X**
6.	Other **(Fuels)**	_____	_____	**X**
7.	Green House Gases	_____	_____	**X**

GENERAL DESCRIPTIONS OF PHYSICAL CONDITIONS OF THP:

The THP area is located approximately 13 miles northeast of Likely, California. The project is at the North end of Jess Valley. The THP is approximately 276 acres within portions of 3 sections in one township. Elevations range from 5200 feet near the bottom of Section 36, to 5825 feet on the southwest 1/16 corner in Section 25. Average annual precipitation is about 19 inches, most of which falls in the form of snow.

Land Use in the Watershed:

The land use within the watershed assessment area is diverse. There is õmultiple-useò management of the USFS ownership with several special wildlife management areas. Private landowners manage their lands to maximize timber production, and livestock grazing. The area also supports ranching and various outdoor recreation activities (hunting, firewood gathering, and sightseeing). Several private residents are located within the assessment area.

Topography and Soils:

The principle topographic features of the plan area are: Jess Valley, Soup Creek and Mill Creek drainages. The THP area has two major ridges running north/south; between the ridges is Soup Creek. Soup Creek drains into Mill Creek south of the THP, (near Jess Valley), Jess Valley dominates the south end of the assessment area.

The soil series within the THP are composed of three major families.1) Smarts family which consists of moderately deep, well drained soils that formed from basalt or tuff. Permeability is moderately slow. 2) Mascamp family which consists of shallow, well drained soils formed from material weathered from andesite, basalt or volcanic tuff. Permeability is moderate. 3) DeMasters family consists of deep and a limited amount of moderately deep, well drained soils that formed in weathered basalt material. Permeability is moderately slow. These soils generally have low erosion hazard (EHR) ratings on slopes less than 30%, and moderate EHR on slopes greater than 30%.

Timber Stand Condition:

Under the California Wildlife Habitat Relationship (WHR) system of classification, the plan area consists of the **Eastside Pine (EPN)** type. The Dunningôs site classification for this stand is site IV; this is generally considered a low quality timber growing site.

Eastside Ponderosa Pine (EPN):

VEGETATION

Structure: The eastside pine is characterized by short to moderate height, 20-35 m (65-115 ft tall) pine trees at maturity. Without disturbance, except for naturally occurring fire, a mosaic of even-age patches develops, with open spaces and dense sapling stands. Oaks or junipers may form an understory, but pure stands of pine are also found. An open stand of low shrubs, less than 2 m (6.5 ft) and a grassy herb layer are typical. Crowns of pines are open, allowing light, wind and rain to penetrate, whereas other associated trees provide more dense foliage.

Composition: Ponderosa pine is the dominant tree with less representation by Jeffrey pine, lodgepole pine, white fir, incense cedar, Douglas fir, California black oak, and western juniper. Undergrowth varies depending on site conditions, but typically may include one or more of the following shrubs: big sagebrush, antelope bitterbrush, manzanita, ceanothus, rubber rabbitbrush, mountain mahogany, creambush, oceanspray, and mountain snowberry. Prominent herbaceous plants include mule ears, arrowleaf balsamroot, Idaho fescue, pinegrass, bluebunch wheatgrass, and squirreltail.

HABITAT STAGES

Vegetation changes 1,2-5; S-D: Logging, bark beetle, root diseases and fire are the major disturbances in the eastside pine type. The understory typical of the specific site increases following disturbance, depending on the nature of the disturbance, season in which it occurred and weather patterns. In general, disturbance favors brush, particularly manzanita and ceanothus. But some kinds of disturbance may eliminate antelope bitterbrush, a desirable deer forage plant that may not be as robust a competitor with trees as are some other shrubs. Open tree stands generally support more vigorous brush or grass understories which may prevent additional tree regeneration for many years. Fire trends maintain pine stands on sites that will support other conifers. The following understory dominants may be used to identify different eastside pine communities; western juniper, manzanita, several species of ceanothus, big sagebrush, antelope bitterbrush, grass dominance and forb dominance.

Duration of Stages: Eastside pine is moderately slow growing and long-lived. The time required for succession varies greatly depending on site, competition, and seed source. The more severe sites within the type impose problems of reproduction and competition, so that stands may not necessarily reproduce themselves after disturbance, being replaced instead by forbs, brush or juniper.

BIOLOGICAL SETTING

Habitat: Eastside pine is bounded at the lower elevation edge by low and big sagebrush, bitterbrush, perennial grassland or pinyon-juniper woodland habitats, which often are found on finer textured soils and at the upper edge by mixed conifer, lodgepole pine, and red fir. Eastside pine occupies an intermediate, less harsh environment than Jeffery pine, which occurs above and intermingles with eastside pine.

Wildlife Considerations: Pine types with shrubby understories have a high degree of vertical diversity, especially when other conifers are present. Large pine branches form good nesting substrates for large raptors. Sites supporting the larger shrub species-manzanita and some ceanothus species- may become so densely vegetated in the absence of fire that livestock and big game cannot use the areas. Eastside pine stands often form important migratory and winter range for deer. Higher elevation stands with grassy understories near water may be extremely important deer fawning areas and migratory holding areas. Important wildlife species in the eastside pine habitat include the bald eagle and American peregrine falcon (peregrine falcon is on federal and state endangered species lists) and the Sierra Nevada red fox and California bighorn sheep.

PHYSICAL SETTING

Eastside pine habitat is found on coarse, well-drained basaltic soils, in a drier, colder setting than the Ponderosa pine (PPN) habitat. All exposures are represented depending on elevation. Fine textured soils favor pinyon-juniper habitats.

DISTRIBUTION

Eastside pine habitat occurs from about 1200-1980 m (4000-6500 ft) elevation, approximately east of a line drawn from Lake Tahoe to Hilt, a small town on Interstate 5 where it crosses the California-Oregon border (McDonald 1983). Eastside pine habitat extends into Oregon; small scattered stands occur south of Lake Tahoe through the northern half of Inyo County.

Within the selection area, carefully developed silvicultural management prescriptions will increase the tree growth rates, retain snag densities, and improve overall stand viability. The existing variety and mosaic-like configuration of dominant habitat types within the assessment area is conducive to good wildlife diversity and habitat. Functional habitat of a variety of wildlife species for feeding, cover, and reproduction is also present in diversified patterns. Early successional species, climax species, and edge species should all have suitable habitat within the assessment area.

This entry into the **selection** stand should increase the quantity of new forage plants. Thermal cover within the project area will stay moderate. No significant effects to game species will result from harvesting operations in the project area.

Watershed and Stream Conditions within the Watershed Assessment Area (WAA-18,348acres);

The WAA has 3 main drainages: 1) Mill Creek, 2) Soup Creek, and 3) East Creek

Mill Creek- (10,258 acres) and tributaries (Poison Creek) occupy the east portion of the WAA.

Poison Creek flows northwesterly into Mill Creek; Mill Creek flows into Clear Lake and then continues southwesterly to the South Fork of the Pit River.

Generally, the tributaries have steeper gradients (5-10%) in the upper reaches of their drainages with rockier streambeds, more incised streambanks, and steeper side slopes. There are some scattered LWD and associated pools. The vegetation ranges from light to moderate, Willow, Aspen, Ponderosa pine, and white fir occupy the stream banks.

As the creek gradients flatten, the water tends to slow and the vegetation becomes moderate to light in the meadows and pastureland in Jess Valley, with the exception of grasses and forbs, which are dense. The lower stream banks show signs of light degradation due to cattle grazing.

Soup Creek- (5,010 acres) is in the northeast of the WAA, and flows southwesterly to merge with Mill Creek. The channel has a low streambed gradient (less then 5%) and a rock-boulder substrate at the upper end, with a light amount of areas that pool. The lower channel is meandering through meadows and pasturelands, here the stream channel has little or no gradient, the sideslopes are moderate to low, and the stream velocity is slow, vegetation is sparse to moderate with low amounts of LWD. Dense grasses and forbs dominate these lower reaches. The lower stream banks show signs of light degradation due to cattle grazing.

East Creek- (3,080 acres) is in the southeastern portion of the WAA and flows northwest to merge with Mill Creek in Jess Valley. East Creek has a moderate streambed gradient (5-10%) in the upper stream channel, and a rock-boulder substrate with a low amount of areas that pool. The lower stream channel has a slow stream velocity as it meanders through Jess Valley, streamside side slopes are low to flat. Vegetation is sparse to moderate, mostly willow. Dense grasses and forbs dominate these lower reaches. The lower stream banks show signs of light degradation due to cattle grazing.

303(d) Listed Watersheds

The lower portion of the Pit River is a listed 303(d) watershed. The main stressors are nutrients, organic enrichment/low dissolved oxygen, and water temperature. Potential sources are agriculture-grazing. Total Maximum Daily Loads (TMDL) limits for this watercourse will be completed in 2013.

The upper portion of the Pit River and the South Fork of the Pit River are not listed.

Beneficial Uses of Surface Waters. The South Fork of the Pit River has listed beneficial uses of water.

South Fork Pit River attributes:

Municipal and Domestic Supply (MUN) - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR) - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.

Water Contact Recreation (REC-1) - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-contact Water Recreation (REC-2**)** ï Potential uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Warm Freshwater Habitat (WARM**)** - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD) - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Spawning, Reproduction, and/or Early Development (SPWN) - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Wildlife Habitat (WILD) - Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

The requirements of the Forest Practice Rules (FPR) regarding watercourse protection measures and silviculture, etc, and the use of Best Management Practices (BMP) for road construction and maintenance reduce the probability of any significant adverse effects from sedimentation/siltation resulting from operations of the THP.

Watershed and Stream Conditions within the THP area

Soup Creek (100 % of THP area) is the main watershed (sections 24, and 25) within the THP and flows south into Mill Creek. The drainage flows through the THP in the middle reaches of Soup Creek. The streams have a low streambed gradient (3-5%) with a shallow incised channel and rock-gravel substrate that shows signs of aggration, but no signs of bank mass wasting. The low stream gradient allows water to pond and promotes light to moderate areas of, willow, aspen, ponderosa pine, and white fir, as the stream flows through meadows and pastures. The lower stream banks show signs of light degradation due to cattle grazing. The banks are covered with dense grasses and forbs, which helps buffer the bank degradation.

This THP, as is, meets or exceeds all the requirements of the Waiver Category 4, Central Valley Regional Water Quality Board.

AS PER 1034(JJ): DESCRIPTION OF PHYSICAL CONDITIONS OF PLAN SITE SUMMARY:

1) Acres, Elevation, % Slopes, and EHR by Silviculture Unit:

Silviculture	Acres	Elevation (ft.)	%Slope Range	Average %Slope	EHR
Selection	17	5530 – 5810	10 – 50	35	MODERATE
Conversion	259	5280 – 5895	10 – 50	30	MODERATE

2) WHR Types:

Silviculture	Pre-Harvest WHR	Post-Harvest WHR	Acres	Percent of Total
Selection	EPN 4M	EPN 4M	17	6
Conversion	EPN 4M	PGS D	259	94

3) Average Frequency of Wildlife Stand Components:

A)	Western Juniper	In the selection area, there are few areas with scattered Junipers. Junipers will not be targeted for harvest, incidental removal may happen near landings, on skid roads, or for road day-lighting.
B)	Large Snags	The RPF estimates that the pre harvest stands average 1.5 snags per acre. Post harvest number of snags should be 1.5 snags per acre. Within the conversion area, all snags will be removed.
C)	Large Down Woody Debris	The RPF estimates preharvest LWD at 1.0 per acre and post harvest levels of 1.5 per acre. Within the conversion area, all LWD shall be removed.
D)	Green Cull	The RPF estimates that roughly 1% of the merchantable sized trees are green culls, having less than 25% sound wood for sawlog production.
E)	Brush	Primary brush species mountain mahogany, big sagebrush, manzanita, and rabbitbrush.

4) Soils:

The soil series of the THP area are: 1) the Smarts- Mascamp Families complex and 2) the Smarts-Mascamp- Demasters deep Families complex. These soils are moderately deep, well drained stony, very gravelly loams with an underlying substratum of basalt. These soils are cobby and have low erosion hazard (EHR) ratings on slopes less than 30%, and moderate EHR on slopes greater than 30%. The moderate EHR calculations were generated from the RPFôs field observations and from the Modoc National Forest soil survey dated 1994.

Past, Present, and Future Activities:

The THP property was purchased in 2006 by the landowner.

Within the last 10 years, the USFS has conducted:

Sale	Silviculture	Sections	Township	Range	Acres
None					

USFS (Future)

Sale	Silviculture	Sections	Township	Range	Acres
West Soup	Roadside hazard	12,13,23,24,25, 16,17,20,21	40N	14E	60
			40N	15E	40

Summary of Past THP's Within the Watershed Assessment Area:

Sale	Silviculture	Sections	Township	Range	Acres
2-97-073-MOD	Selection	25	40N	14E	149
	Rehabilitation	29	40N	15E	
2-00-051-MOD	Alternative (commercial - thinning) Shelterwood Removal	29,32,33	40N	15E	143

Present Activities

none

Future Activities

There are no known future plans within the WAA, but both private and public lands have commercial timberlands within the WAA, it can be expected that harvests will be planned in the future.

Information Sources:

Marty Yamagiwa- Fishery Biologist ï Modoc National Forest- 800 West 12th street, Alturas, Ca. 96101 ï Phone 530-233-5811

Dennis Banister- Timber Management Officer - ï Modoc National Forest- 800 West 12th street, Alturas, Ca. 96101 ï Phone 530-233-5811

Mary Rasmussen-Flores- Wildlife Biologist- Warner Mountain Ranger District, Modoc National Forest P. O. Box 220, Cedarville, Ca. 96104 ï Phone 530-279-6116

Joe Croteau- Environmental Scientist, Dept. of Fish and Game, 303 South Street, Yreka, Ca. 96097 ï Phone 530-842-0882

Gerry Gates ï Archaeologist ï Modoc National Forest- 800 West 12th street, Alturas, Ca. 96101ï Phone - 530-233-5811

Debra Hallis- Engineering Geologist ï California Regional Water Quality Control Board- Central Valley Region ï 415 Knollcrest Drive, Suite 100, Redding, Ca. 96002 Phone 530-224-4801

Martin J. Lenz- Botanist - 400 Del Monte St., Montague, CA 96064
Phone 530-459-3459

Darlene McGriff- Senior Biologist Specialist- California Natural Diversity Database, 1807 13th St. Suite 202, Sacramento, CA. 95811 Phone (916)-322-2494

Other Sources:

CDF THP records

Archeological Records- Northeast Information Center- Chico, CA

A site classification for mixed conifer selection forests of the Sierra Nevada-Dunning-1942

USGS 7.5 minute contour maps.

DF&G Natural Diversity Database

Modoc National Forest soil survey ï 1994.

Plumas National Forest rare plant handbook ï 1999

California Native Plant Societyôs Inventory of Rare and Endangered Vascular Plants of CA. August 2001

The Jepson Manual- James C. Hickman 1993

A California Flora- Munz and Keck 1959

Selected Rare Plants of Northern California, University of California, Agriculture and Natural Resources, Publication 3395.

Cal Flora Database-Information on California plants for education, research, and conservation

DF&G- Habitat Conservation Planning Branch

CDF, FRAP- Salmon and Watershed Mapping Tool

CWHR Version 8.0

Central Valley SWQCB web site for Clean Water Act 303(d) listings and beneficial uses of water

Designing Watercourse Crossings for Passage of 100-year Flows, Wood, and Sediment- CDF 2004, California Forestry Report No. 1

Forest Volume-to-Biomass Models and Estimates of Mass for Live and Standing Dead Trees of U.S. Forests ï James E. Smith et al, 2002, GTR NE-298

Life- Cycle Analysis of Wood Products: Cradle- to-Gate LCI of Residential Wood Building Materials, Puettmann, Maureen E. AND Wilson, James B., 2005

Forests, Carbon and Climate Change: Chapter Five; Krankina, Olga N. & Harmon, Mark E.

NRCS- Drawings and Specifications- Rod Flournoy, Seeding Recommendation for the Brooks Mill Timber Harvest Plan, Prepared by: Alturas Field Office Modoc County, October 15, 2009

ASSESSMENT OF CUMULATIVE IMPACTS:

Watershed Assessment Area: The rationale for the establishment of the assessment area is to utilize the main drainage in this watershed. Main ridges that define the drainage patterns or predominant features like mountaintops and large flats were used to generalize this pattern and the CDF hydrologic basin and watershed maps were used to refine the process. The intent is to identify a large enough area to detect any significant impacts. The assessment area is **Upper Mill Creek** and **Lower Mill Creek** watersheds as delineated by Calwater version 2.2. The assessment area is approximately **18,348 acres.** The watershed assessment area is outlined on the Watershed and Biological Assessment Area Map.

Land Ownership within Assessment Area:

OWNERSHIP	ACRES	PERCENT
Brooks Mill THP Acreage	276	1.5%
United States Forest Service	13748	75%
Private Landowners	4324	23.5%
Total Assessment Area	18,348	100%

The adjacent owners were contacted by letter and notification in the local paper, and there were no responses concerning domestic water sources within 1000 feet of the THP.

The proposed THP should not combine with past, current, or foreseeable future projects to contribute to, or cause significant adverse impacts to the watershed in the assessment area.

The beneficial uses of water in the plan area and in the watersheds are biological (supporting habitat for fish and other aquatic species seasonally and providing water for the various wildlife species in the area) and domestic (in the form of cattle grazing). **Cumulative Watershed Effects (CWE's**) are discussed below:

Sediment ï Sediment induced effects will be negligible, as the Forest Practice Rules and mitigation measures are implemented. Some of the important measures are:

1) Reducing the number and width of skid trails, whenever possible

2) Using standard water barring numbers and distances as per moderate erosion hazard ratings instructions.

3) Minimizing the size and number of landings.

Additionally, in the conversion areas, grass seed will be broadcast at 8-18 lbs/acre after October 15th of the year of harvest

Soil productivity losses resulting from soil compaction will be minimized by:

1) Using the minimum number of skid trails necessary.

2) Not operating on saturated soils.

Water Temperature and Organic Debris ï The shade and filter strip retention standards stated in item no. 26 of Section II (Class I and Class III) in this plan will adequately protect waters from significant temperature elevations. These protection standards will also adequately protect waters from soil or debris from entering the watercourses and creating any negative effects.

Chemical Contamination ï There is a negligible risk of chemical spillage entering the watercourses. The watercourses will have WLPZ's, and ELZ's.

This THP neither mandates nor proposes the use of herbicides in the project area. Any use of herbicides would be subject to a regulatory process unrelated to timber harvest regulation. Application of pesticides on timberlands is regulated by the Department of Pesticide Regulation and is monitored by the Central Valley Regional Water Quality Control Board (CVWQCB).

In regard to herbicide use:

1- No herbicides will be used in association with the current plan. The land owner is a rancher who does not use herbicides.

Peak Flow ï A net increase in peak flow may occur in the watercourses of the THP. Harvesting will open the canopy, allowing for more snow pack on the ground, increasing the chance of greater run off from rain on snow events, thus increasing the chance of peak flow effects. It should be noted that peak flows from rain on snow events are common at elevations within the plan. They are natural and expected. The RPF believes that the protection standards as specified under this plan and the subsequent grass seeding will adequately protect the watercourse from any significant impacts to peak flow effects.

Soil Productivity Assessment

Assessment area boundary: Limited to the area of the proposed THP

Rationale: This covers the area that operations will occur and which may have the potential for impact.

Losses to growing space associated with the selection prescription under this THP will be minimal. Existing skid trails will be used as much as possible The RPF anticipates minimal loss to growing space as the leave tree spacing in the well stocked stands is sufficient to allow skid trails to go between them. Growing space in the conversion area will probably increase due to the seeding.

No significant losses in organic matter are expected to occur as a result of operations associated with this THP. Present large wood debris levels and duff concentrations will be minimally impacted.

Soil productivity losses to compaction may be significant, if operations occur during periods of high soil moisture content. Old skid trails will be used, when possible, limiting additional area subject to compaction.

Surface soil erosion is most likely to occur on the steeper slopes. The THP will operate on slopes less than 50% and the selection prescription will leave enough canopy cover and understory to minimize soil erosion on these steeper slopes. Grass seeding will reduce the potential impact in the conversion area.

Where possible, roads will be out sloped and rolling dips rather than waterbars will be used for erosion control on the roads.

Biological Impacts Assessment

Assessment area boundary: The biological assessment area (BAA) is the same as the watershed assessment area (WAA). The BAA has been expanded in the scoping process to include the 2 topographic quad search for the NDDB listings and the 9 topographic quad search for plants.

Rationale: It contains a variety of habitat types suitable for a wide range of species.

In general, the selection acres will not change the WHR typing, remaining (EPN-4 M), and with the retention of scattered snags, large woody debris, and healthy conifers will minimize potential adverse impacts. The conversion area will be converted to grassland-pastureland (PGS)

a.**Snags/Den/Nest Trees**- It is estimated that 1.5 snags (1<24"dbh-20' high, 1>24"dbh-20' high) exist per acre prior to operations and will probably remain following harvest in the selection area. Snags shall not be removed except as detailed in THP Item #33. The implementation of the proposed snag/green cull retention standards, and consideration of the past management practices by the landowners, it is unlikely that future projects will significantly alter the distribution or

characteristics of snags and green culls in the assessment area. Within the conversion area, all snags will be removed.

b. **Downed, Large Woody Debris (LWD) Characteristics-** Watercourse LWD will not be affected by activities under this project. LWD is woody debris at least 16 inches in diameter and at least 10 feet in length. In most stands, there is some large woody debris (1-3 pieces/acre), which provides habitat for many wildlife species. As described in THP Item #33, all unmerchantable downed logs within the selection acres shall be left in the harvest area. Within the conversion area, all LWD shall be removed.

c. **Multistory Canopy**: The THP and the assessment area have stands with multistoried canopies as well as single stored canopies. Use of the selection silvicultural prescriptions will remove trees from all diameter classes and essentially leave the canopy structure intact. All size timber dbh classes will be retained within the conversion area, but the low basal area (25 ft2) will not give the appearance of a multistoried canopy.

Road Density: Road density in the assessment area (1.0-5.5 miles per section) represents what has been required in the past to conduct timber operations and serve the owners in this area. Considering stand characteristics in the assessment area as a whole, roads are unlikely to have any adverse effect on large mammal populations. Individual animals may be briefly disturbed during timber operations; however, these effects will be neither permanent nor significant.

e. **Hardwood Cover**: in general, there are very few hardwoods and they will not be targeted for harvest in the selection area of the THP. The density and distribution of hardwoods in these areas will be minimally affected by operations under this project. The few hardwoods will be removed in the conversion area

f. and g. **Late Seral (Mature) Forest Characteristics and Continuity**: Within the THP area, there are no stands that meet the 80 acre criteria of late seral stage forest as defined in 14 CCR Technical Rule Addendum No. 2. This project area will have no adverse impact on late seral forests.

h. **Special Habitat Elements**: There are no known special habitat elements in the assessment area which require protection above what is provided in this project.

SPECIES	Species observed within THP boundary	Species observed within BAA area
Birds		
Bald Eagle	No	No
Great Gray Owl	No	No
California Spotted Owl	No	Yes
Northern Goshawk	Yes	Yes
Willow Flycatcher	No	No
Greater Sand-Hill Crane	No	Yes
Prairie Falcon	No	Yes
Osprey	No	No
Fish		
Redband trout	Yes	Yes
Mammals		
American Badger	No	No
American Martin	No	No
California Wolverine	No	No
Pacific Fisher	No	Yes
Sierra Nevada Red Fox	No	No
Plants		
Grass alisma	No	No
Masonic rock cress	No	No
Hillside arnica	No	No
Falcate saltbush	No	No
Dwarf resin birch	No	No
Upswept moonwort	No	No
Scalloped moonwort	No	No
Common moonwort	No	No
Mingan moonwort	No	No
Mud sedge	No	No

Liddonôs sedge	No	No
Sheldonôs sedge	No	No
Western valley sedge	No	No
Fell-fields claytonia	No	No
Yakima birdôs-beak	No	No
Spiked larkspur	No	No
Doublet	No	No
English sundew	No	No
Snake River daisy	No	No
Prostate buckwheat	No	No
Modoc bedstraw	No	No
Boggs Lake hedge-hyssop	No	No
MacDougalôs lomatium	No	No
Hendersonôs lomatium	No	No
Ravenôs lomatium	No	No
Adobe lomatium	No	No
Bearded lupine	No	No
Lilliput lupine	No	No
Toiyabe bluebells	No	No
Long bluebells	No	No
Beautiful sagebrush bluebells	No	No
Sagebrush bluebells	No	No
Cusickôs monkeyflower	No	No
Great Basin nemophila	No	No
Blunt-fruited sweet-cicely	No	No
Blue alpine phacelia	No	No
Squarestem phlox	No	No
Slender-leaved pondweed	No	No
Eel-grass pondweed	No	No
Western black currant	No	No
Bebbôs willow	No	No
Fleshy sage	No	No
Tufted saxifrage	No	No
Oregon campion	No	No
Hairy marsh hedge-nettle	No	Yes
Wooly Stenotus	No	No
Kitten-tails	No	No

BIRDS

Bald Eagle (*Haliaeetus leucocephalus*)

Status: Federal not listed, State Endangered, State Fully Protected.

DISTRIBUTION, ABUNDANCE, AND SEASONALITY : Permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity cos. About half of the wintering population is in the Klamath basin. More common at lower elevations; not found in the high Sierra Nevada. Fairly common as a local winter migrant at a few favored inland waters in southern California. Largest numbers occur at Big Bear Lake, Cachuma Lake, Lake Mathews, Nacimiento Reservoir, San Antonio Reservoir, and along the Colorado River.

SPECIFIC HABITAT REQUIREMENTS

Feeding: Requires large bodies of water, free-flowing rivers with abundant fish, and adjacent snags or other perches. Swoops from hunting perches, or soaring flight, to pluck fish from water. Will wade into shallow water to pursue fish. Pounces on, or chases, injured or ice bound water birds. In flooded fields, occasionally pounces on displaced voles, or other small mammals. Open, easily approached hunting perches and feeding areas used most frequently.

Cover: Perches high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near water. Roosts communally in winter in dense, sheltered, remote conifer stands. In Klamath National Forest, winter roosts were 16-19 km (10-12 mi) from feeding areas (Spenser 1976b)

Reproduction: Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine. Nests most frequently in stands with less than 40% canopy, but usually some foliage shading the nest (Call 1978). Often chooses largest tree in a stand on which to build stick platform nest. Nest located 16-61 m (50-200 ft) above ground, usually below tree crown. Species of tree apparently not so important as height and size. Nest usually located near a permanent water source.

Water: In California, 87% of nest sites were within 1.6 km (1 mi) of water.

Pattern: Requires large, old-growth trees or snags in mixed stands near water.

SPECIES LIFE HISTORY

Activity Patterns: Yearlong, diurnal activity. Winter feeding usually occurs immediately after dawn and in late afternoon.

Seasonal Movements/Migration: Individuals that breed in California may make only local winter movements in search of food. Winter migrants move from north to south.

Home Range: No data found.

Territory: Breeding territory in Alaska (n=14), varied from 11-45 ha (28-112 ac), and averaged 23 ha (57ac) (Hensel and Troyer 1964). Breeding territory defended from mating through fledging. Minimum distances between nests were 1 km (0.6 mi) in Alaska, and 0.62-1.24 km (1-2 mi) in Washington.

Reproduction: Breeds February through July, peak activity March to June. Clutch size usually 2; range 1-3. Incubation usually 34-36 days. Semialtricial young hatch asynchronously (Ehrlich et al 1988). Monogamous, and breeds first at 4-5 yr.

Niche: Highly vulnerable to DDE- induced eggshell thinning. Competes with, and steals prey from osprey. Territories have been abandoned after disturbance from logging, recreational development, and other human activities near nests (Thelander 1973). Usually does not begin nesting if human disturbance is evident.

Presence within BAA: There are no known sightings within the BAA, the THP, or the limiting distance from the THP.

Response: The nearest sighting is at Blue Lake approximately 9 miles south of the THP area. The nest is outside the assessment area, and combined with the distance from the plan area to a possible fishery, the RPF anticipates no significant adverse impacts to potential bald eagle nest sites as a result of the proposed operations

Northern Goshawk (*Accipiter gentilis*)

Status: State listed as a Species of Special Concern

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: Breeds in North Coast Ranges through Sierra Nevada, Klamath, Cascade, and Warner Mts., and possibly in Mt. Pinos and San Jacinto, San Bernardino, and White Mts. Remains yearlong in breeding areas as a scarce to uncommon resident. Prefers middle and higher elevations, and mature, dense conifer forests. Casual in winter along coast, throughout foothills, and in northern deserts, where it may be found in pinyon-juniper and low elevation riparian habitats.

SPECIFIC HABITAT REQUIREMENTS;

Feeding: Hunts in wooded areas. Uses snags and dead topped trees for observation and prey-plucking perches. Feeds mostly on birds, from robin to grouse in size. Small mammals, of squirrel and rabbit size, often taken. Rarely eats carrion and insects. Prey caught in air, on ground, or in vegetation, using fast, searching flight, or rapid dash from a perch.

Cover: Uses mature and old growth stands of conifer and deciduous habitats.

Reproduction: Usually nests on north slopes, near water in densest parts of stands, but close to openings (Jackman and Scott 1975). In eastern Oregon, nests usually was located in fork of large, horizontal limb close to trunk, at bottom of live canopy 6-24 m (19-82 ft) above ground. Uses large, live trees with mean diameter of 27.4 cm (11 in) (Reynolds et al 1982). Uses old nests and maintains alternative sites.

Water: Usually, there is a water source within a territory. Young have been reported bathing (Bond 1942, Brown and Amadon 1968)

Pattern: Dense, mature conifer and deciduous forest, interspersed with meadows, other openings, and riparian areas required. Nesting habitat includes north facing slopes near water.

SPECIES LIFE HSTORY:

Activity patterns: Yearlong, diurnal activity

Seasonal Movements/ Migrations: Some movement downslope after breeding season, as far as valley foothill hardwood habitat in Sierra Nevada. Migration into lowlands occurs irregularly, probably related to availability of food rather than weather (Mallette and Gould 1978).

Home Range: Home range appears to be same as territory.

Territory: Extremely defensive of nest area. Vociferous, will strike intruders, including humans Territory estimated to be 1.6 to 39 km^2 (0.6 to 15 mi^2) (Brown and Amadon 1968). Averaged 2.1 km2 (0.8 mi^2) in Wyoming (Craighead and Craighead 1956). Distances of 2.9 to 5.6 km (1.8 to 3.5 mi)

have been reported between nesting pairs.

Reproduction: Begins breeding in April in southern California, and by mid June in the north. Female lays eggs in 3 day intervals for average clutch of 3 (range 1-5). Female incubates 36-41 days while male provides food. After hatching, female feeds brood 8-10 days, then male helps feed them. Young may leave nest to perch at about 40 days, usually fledge by 405 days. Young begin to hunt by 50 days, and often independently by 70 days.

Niche: Great horned owls, ravens, and crows may prey on young goshawks. May be limited competition for food with other accipiters.

Presence within BAA: There are six (6) recorded eyries within the BAA. These reports are from 1982 through 1989.

Response: One known historic nest site in T40N, R14E, Section 24 is within the THP boundary, and was reported inactive between 1987-1989. Another known historic nest site is in T40N, R14E, Section 25 and is within the limiting distance of the THP boundary and was reported inactive in 1983. The 4 other historic nest sites are outside of the limiting distance of the THP.

No active or occupied nests were observed within the THP area during THP preparation. A goshawk was observed flying through the area of Brooks Mill in the fall 2008.

In consultation with DFG, the area on the west side of Soup Creek will be surveyed for goshawks, if operations are within the critical breeding period, 15 March-15 August. An (Intensive Search Survey) will be conducted to locate any nests sites within the harvest area and within the limiting distance of the THP. The survey will follow DFG protocols, (3 people, 100 meter interval, northwest-southeast bearing, June-August). The survey will be completed in the same year, prior to operations.

Considering the protection provided within the assessment area by the FPRûs and those described in this THP (e.g., the response to Item 32(a) in Section II), operations on this plan should not have a significant impact on this species.

Willow Flycatcher (*Empidomax traillii*):

Status: State Listed as Endangered

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: A rare to locally uncommon, summer resident in wet meadow and montane riparian habitats at 600-2500 m (2000-8000) in the Sierra Nevada and Cascade Range. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows (Serena 1982). May still nest elsewhere in lowland California, as in San Diego Co., but definite records are lacking. Common spring (mid-August to early September) migrant at lower elevations, primarily in riparian habitats throughout the state exclusive of the North Coast (Grinnell and Miller 1944, Gaines 1977a, 1977b, Ramsen 1978, McCaskie et al 1979, Garrett and Dunn 1981). Populations are most numerous where extensive thickets of low, dense willows edge on wet meadows, ponds, or backwaters. Individuals nest and roost on low, exposed branches of dense willow thickets and make short trips for prey.

SPECIFIC HABITAT REQUIREMENTS

Feeding: Makes short sallies for flying insects from exposed perches in willow thickets or from low perches in adjacent meadows. Occasionally eats berries and seeds (Bent 1942)

Cover: Dense willow thickets are required for nesting and roosting. Low, exposed branches are used for singing posts and hunting perches. In the Sierra Nevada, consistently absent from otherwise apparently suitable areas where the lower branches of willow had been browsed heavily by livestock (Serena 1982)

Reproduction: Open, cup nest is placed in an upright fork of willow or other shrub, or occasionally on a horizontal limb, at height of 0.5-3.0 m (1.5-10 ft) (Stein 1963)

Water: No specific information found, but nesting site usually near languid stream, standing water, or seep.

Pattern: Most numerous where extensive thickets of low, dense willows edge on wet meadows, ponds, or backwaters.

SPECIES LIFE HISTORY

Activity Patterns: Yearlong, diurnal activity

Seasonal movements/Migration: Arrives from Central and South American wintering grounds in May and June. Departs in August, transients noted through mid-September.

Home Range: In breeding season, probably equal to territory. Density estimates range from 9.2 pairs per 40 ha. (100 ac) in eastern Washington scrub habitat (King 1955), to 60.7 individuals per 40 ha.

(100 ac) in Michigan scrub habitat (Berger 1957).

Territory: In Michigan, Walkinshaw (1966) found average territory of 0.7 ha (1.7 ac), range 0.3-1.2 ha (0.8-2.9 ac)

Reproduction: Monogamous; peak egg laying in June, incubation12-13 days. Clutch averages 3-4 eggs; probably single-brooded. Both sexes care for altricial young. Fledging age 13-14 days (Stein 1963).

Niche: Frequently parasitized by brown-headed cowbird. Formally bred commonly in willow thickets throughout most of lowland and montane California (Grinnell and Miller 1944), but numbers have declined drastically in recent decades because of cowbird parasitism and habitat destruction (Gaines 1977a, Remsen 1978, Serena 1982). Heavy grazing of willows by livestock apparently reduces numbers (Ehrlich et al 1988)

Comments: Formally known as Traillôs flycatcher (Grinnell and Miller 1944). Empidonax flycatchers are very difficult to identify in the field.

Presence within BAA: There are no known sightings within the BAA, the THP, or the limiting distance from the THP.

Response: There is a marginal potential habitat along Soup Creek, but due to the cattle grazing the quality of the habitat is poor.

Considering the protection provided within the assessment area by the FPRôs and those described in this THP, operations on this plan should not have a significant impact on this species.

Great Gray Owl (*Strix nebulosa*)

Status: State ï Endangered

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: A rarely seen resident at 1400m to 2300 m (4500-7500 feet) in the Sierra Nevada from the vicinity of Quincy, Plumas Co. south to the Yosemite region. Most recent records are from the Merced and Tuolumne River drainages of Yosemite National Park. Occasionally reported in northwestern California in winter, and in Warner Mts. in summer (McCaskie et al. 1988). Breeds in old-growth red fir, mixed conifer, or lodgepole pine habitats, always in the vicinity of wet meadows. Recent studies suggest a population decline; there may be fewer than 50 pairs remaining in California (Grinnell and Miller 1944, Winter 1980, 1982).

SPECIFIC HABITAT REQUIREMENTS

Feeding: Stoops on meadow-dwelling rodents, especially pocket gophers and voles, from low, exposed perches in or on edge of meadows. Eats a few birds, up to grouse size.

Cover: Uses trees in dense forest stands for roosting cover. Small trees and snags in, or on edge of, meadows used for hunting perches.

Reproduction: Nests in large, broken-topped snags, usually greater than 60 cm (24 in) dbh; builds no nest (Winter 1980). The 6 nests located in California have been within 262 m (860 ft) of a meadow (Winter 1980, 1982). Nest height raged from 7.6 to 21.9 m (25-72 ft) above the ground. In other parts of range, often uses old hawk or eagle nests.

Water: No additional data found.

Pattern: Forages in wet meadows and nests and roosts in nearby dense coniferous forest. Both old-growth and second-growth forest used if suitable nest-sites are available (Winter 1982).

SPECIES LIFE HISTORY

Activity Patterns: Yearlong, circadian activity; considerable daytime activity.

Seasonal Movements/Migration: Most individuals apparently are resident, but there are few winter records. Some non-breeders, post-breeders, and juveniles wander above breeding range to 2900 m (900ft) (Gaines 1977b). may be nomadic, following prey populations.

Home Range: Home range and territory probably same. In California, Winter (1982) estimated home range at 239-258 ha (591-638 ac). In Wyoming, Craighead and Craighead (1956) reported that home range varied from 256-400 ha (632-988 ac)

Territory: Most of home range probably defended. In Quebec, Brenton, and Pittaway (1971) reported

a mean territory size of 45 ha (112 ac).

Reproduction: Peak of egg-laying probably March through May. Monogamous. One clutch per year averages 3 eggs (range 1-5). Incubation about 30 days, by female. Male feeds female and semialtricial young at nest. Fledging age is 21-28 days, or more (Pulliainen and Loisa 1977).

Niche: Largest North American owl. California Endangered; apparently the rarest owl in California.

Presence within BAA: There are no known activity centers within the BAA, the THP, or limiting distance from the THP. There are no known sightings from the USFS, NDDB, or the landowner. No owls were observed by the RPF during the preparation of this THP.

Response: The THP has marginal potential for nesting or roosting due to limited amount of larger nest trees. The small size of the stream zone and meadow provide limitedl foraging habitat.

Considering the protection provided within the assessment area by the FPRûs, operations on this plan should not have a significant impact on this species.

California Spotted Owl (*Strix occidentalis occidentalis*)

Status: State listed as a Species of Special Concern

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: An uncommon, permanent resident in suitable habitat. In northern California, resides in dense, old-growth, multi-layered mixed conifer, redwood, and Douglas fir habitats, from sea level up to approximately 2300 m (0-7600 ft).

SPECIFIC HABITAT REQUIREMENTS:

Feeding: Feeds in forest habitats upon a variety of small mammals, including flying squirrels, woodrats, mice and voles, and a few rabbits. Also eats small birds, bats, and large arthropods. Usually searches from a perch and swoops or pounces on prey in vegetation or on the ground. May cache excess food.

Cover: Uses dense, multi-layered canopy cover for roost seclusion. Roost selection appears to be related closely to thermoregulatory needs; intolerant of high temperatures. Roosts in dense overhead canopy on north facing slopes in summer. In winter, roosts in oak habitats. In northern regions of the state, daytime roosts averaged 165 m (549 feet) from water.

Reproduction: Usually nests in tree or snag cavity, or in broken top of large tree. Less frequently nests in large mistletoe clump, abandoned raptor or raven nest, in cave or crevice, on cliff or ground (Call 1978). Mature, multi-layered forest stands are required for breeding (Remson 1978). Nests usually placed 9-55 m (30-180 ft) above the ground.

Water: Probably requires a permanent water source. May reduce heat stress by bathing (Barrows and Barrows 1978, Barrows 1981). Drinks freely in captivity.

Pattern: Requires blocks of 40-240 ha (100-600 ac) of mature forest with permanent water and suitable nesting trees and snags (Forsman 1976). In northern California, apparently prefers narrow, steep-sided canyons with north facing slopes.

SPECIES LIFE HISTORY

Activity Patterns: Yearlong, nocturnal activity (Forsman 1976)

Seasonal Movements/Migrations: Not migratory, although some individuals may move downslope in winter.

Home Range: Forsman et al (1977) found ranges in mature Douglas fir/hemlock forests in Oregon of 120-240 ha (300-600 ac), with a mean of 180 ha (450 ac) Gould reported similar home range size in the Sierra Nevada. Individuals spaced 1.6 to 3.2 km (1-2 mi) apart in suitable habitat (Marshall 1942, Gould 1974).

Territory: Gould (1974) found that territory in conifer forests in the Sierra Nevada varied from 40-138 ha (100-340 ac), with a mean of 93 ha (230 ac). Very few observations of territorial behavior reported, in part because of wide spacing of pairs and inconspicuous behavior.

Reproduction: Breeds from early March through June, with peak in April and May. One brood per year. Clutch Size 1-4, usually 2. Female incubates and broods young; male feeds female and young. May not be mature sexually until 3 yr. Pair may use same breeding site for 5-10 yr, but may not breed every year. (Forsman 1976).

Niche: Great horned owl and goshawks are potential predators of young (Forsman 1976). Requires mature forest stands with large trees and snags; very sensitive to habitat destruction and fragmentation (Gould 1974, Forsman 1976).

Presence within BAA: There is one known sighting within the BAA, but none within the THP.

Response: The 1980 sighting was an individual and was given a territory number MOD0001. The location is more than 1.3 miles from the THP

Considering the protection provided within the assessment area by the FPRûs and those described in this THP, operations on this plan should not have a significant impact on this species.

Osprey (*Pandion haliaetus*)

Status: State Species of Special Concern

DISTRIBUTION, ABUNDANCE, AND SEASONALITY : breeds in northern California from Cascades Ranges south to Lake Tahoe, and along the coast south to Marin Co. Regular breeding sites include Shasta Lake, Eagle Lake, Lake Almanor, other inland lakes and reservoirs, and northwest river systems. Breeding population estimated in 1975 at 350-400 pairs in northern California (Henny et al 1975); numbers apparently increasing in recent years. An uncommon breeder along southern Colorado River, and uncommon winter visitor along the coast of southern California (Garrett and Dunn 1981). Associated strictly with large, fish-bearing waters, primarily in ponderosa pine through mixed conifer habitats.

SPECIFIC HABITAT REQUIREMENTS

Feeding: Preys mostly on fish; also takes a few mammals, birds, reptiles, amphibians, and invertebrates. Requires open, clear waters for foraging. Uses rivers, lakes, reservoirs, bays, estuaries, and surf zones. Swoops from flight, hovers, or perches to catch fish near surface of water.

Cover: Uses large trees, snags, and dead-topped trees in open forest habitats for cover and nesting

Reproduction: Nests on platform of sticks at the top of large snags, dead-topped trees, on cliffs, or on human-made structures. Nests may be as much as 71 m (250 ft) above ground. Occasionally nests on ground. Nest usually within 400 m (1312 ft) of fish producing water, but may nest up to 1.6 km (1 mi) from water (Airola and Shubert 1981). Needs tall, open-branched õpilot treesònearby for landing before approaching the nest, and for use by young for flight practice. Nest tree averaged 172 cm ((68 in) dbh (range 76-206 cm; 30-81 in dbh) in northern California. Nest height averaged 41 m (135 ft) (Airola and Shubert 1981)

Water: Clear, open waters required for foraging. Some individuals bathe (Bent 1937)

Pattern: Uses large snags and open trees near large bodies of water.

SPECIES LIFE HISTORY

Activity Patterns: Yearlong, diurnal activity

Seasonal movements/Migration: Arrives on nesting grounds mid March to early April. Migrates south along coast and western slope of Sierra Nevada in October to Central and South America.

Home Range: Travels up to 8-10 km (5-6mi) from nest to fishing areas (Garber 1972, French and Koplin 1977)

Territory: In Montana, Flath (1972) observed that an area of 230 m2 (1700 ft2) around nest site was

defended against Canada geese. In Florida, nests and immediate vicinity were defended; nests were as close as 20 m (66 ft) from each other (Ogden 1975). Pair defends nest sometimes violently, when young present (Call 1978).

Reproduction: Breeds March to September. Clutch size 1-4 eggs, usually 3. Colonial nesting common. Young breed first at 3 yr. Pesticides caused reproductive failure in past (Garber 1972), but reproductive success has increased since early 1970ôs (Airola and Shubert 1981)

Niche: Bald eagles and gulls compete with osprey for food, often stealing osprey catch.

Presence within BAA: There is one known nest sighting within the BAA, none within the THP, or the limiting distance from the THP.

Response: an Osprey pair has been observed at a nest site in Mill Creek 0.25 miles west of Clear Lake, in the south Warner Wilderness in 1992. The nearest observation is approximately 1.00 miles east of the THP.

Considering the protection provided within the assessment area by the FPRôs and those described in this THP (e.g., the response to Item 32(a) in Section II), operations on this plan should not have a significant impact on this species.

SECTION IV – Cumulative Impacts
(PART OF PLAN)
“Brooks Mill THP”

Sandhill Crane (*Grus canadensis*)

Status: State listed as Threatened

DISTRIBUTION, ABUNDANCE, AND SEASONALITY

Both greater (G. c. tabida) and lesser (G. c. canadensis) sandhill cranes occur in California. Historically, G. c. tabida was a fairly common breeder on northeastern plateau (Grinnell and Miller 1944). Now reduced greatly in numbers, and breeds only in Siskiyou, Modoc and Lassen cos. and in Sierra Valley, Plumas and Sierra cos. (James 1977, Remsen 1978, McCaskie et al. 1979). In summer, this race occurs in and near wet meadow, shallow lacustrine, and fresh emergent wetland habitats. It winters primarily in the Sacramento and San Joaquin valleys from Tehama Co. south to Kings Co. (Grinnell and Miller 1944), where it frequents annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open, emergent wetlands. It prefers relatively treeless plains. The migratory, nonbreeding subspecies G. c. canadensis winters in similar habitats in the San Joaquin and Imperial valleys (Grinnell and Miller 1944), and to a lesser extent in the Sacramento Valley. In southern California, concentrates on the Carrizo Plain, San Luis Obispo Co., with smaller flocks near Brawley, Imperial Co., and Blythe, Riverside Co. (Garrett and Dunn 1981). The
latter 2 flocks may be partly, or largely, G. c. tabida, which formerly wintered more commonly in southern California, but which has declined greatly there and throughout its range. Outside of known wintering grounds, extremely rare except that migrates over much of interior California. A few coastal sightings from Marin Co. southward, but no records from offshore islands.

SPECIFIC HABITAT REQUIREMENTS

Feeding: When foraging, prefers open shortgrass plains, grain fields, and open wetlands (Grinnell and Miller 1944). Moist sites commonly used, but also feeds on dry plains far from water. Feeds on grasses, forbs, especially cereal crops (newly planted or harvested); also uses long bill to probe in soil for roots, tubers, seeds, grains, earthworms, and insects. Larger prey, such as mice, small birds, snakes, frogs, and crayfish also are taken. These are ripped into small pieces before being consumed (Terres 1980). Fruits and berries are eaten, if available (Eckert and Karalus 1981).

Cover: Roosts at night in flocks standing in moist fields or in shallow water (Terres 1980). Also roosts in expansive, dry grasslands, island sites, and wide sandbars (Johnsgard 1975a, Eckert and Karalus 1981).

Reproduction: Nests in remote portions of extensive wetlands (Cogswell 1977), or sometimes in shortgrass prairies (Eckert and Karalus 1981). On dry sites, nests are scooped-out depressions lined with grasses. More commonly, nests are large mounds of wetland plants, in shallow water. Natural hummocks or muskrat houses often used. Ideal sites are on small islands screened by tall tules, cattails, or shrubs (Harrison 1978).

Water: Avoids saline waters. Requires fresh water for drinking and bathing (Marcot 1979).

Pattern: When nesting, prefers open habitats with shallow lakes and fresh emergent wetlands. In winter, also inhabits dry grasslands and croplands especially near wetlands (Grinnell and Miller 1944). Prefers treeless habitats where predators can be seen (Cogswell 1977).

SPECIES LIFE HISTORY

Activity Patterns: Yearlong, diurnal activity. Roosts at night and flies to feeding areas in flocks (Terres 1980). Migrates by night and day (Eckert and Karalus 1981).

Seasonal Movements/Migration: Breeding population from north of California passes southward through the state in September and October and northward in March and April, and many individuals spend the winter. Travels in great flocks. Migration is rapid and direct; flies both night and day and stops only for short periods to feed and rest. California breeding population winters chiefly in the Central Valley.

Home Range: In Florida, Nesbitt (1976) recorded 3 home ranges 1 June to 1 August, averaging 460 ha (1137 ac); individuals moved an average of 8.5 km (5.3 mi) per day within home range. Migrants sometimes range as far as 8 km (5 mi) daily from roost to feed (Walkinshaw 1973).

Territory: Established pair may defend the same territory in successive years, and may use the same nest site (Johnsgard 1975a). At Malheur Refuge in Oregon, Littlefield and Ryder (1968) recorded 8 territories averaging 25 ha (62 ac) and ranging from 1.2 to 68 ha (3-168 ac). In Idaho, Drewien (1974) recorded the average size of 5 territories as 17 ha (42 ac). Walkinshaw (1973) summarized data on 171 territories in 4 states and reported averages in different regions of 16, 42, 53, 65, and 85 ha (40, 103, 132, 161, and 210 ac), with a range of 3.2 to 194 ha (8-480 ac).

Reproduction: Courtship begins in April with elaborate dancing behaviors that often include 50-80 individuals (Eckert and Karalus 1981). Peak breeding May until July, and nesting completed by late August. Monogamous, and may remain paired for life (Johnsgard 1975a). Solitary nester; average clutch size 2, range 1-3 (Harrison 1978). Single-brooded, with an incubation period of about 30 days (Johnsgard 1975a). Young precocial, and parents often separate chicks. If chicks are raised together, antagonism between them may reduce reproductive success to 1 chick per yr (Johnsgard 1975a). Young fly at about 70 days, but remain with adults up to a year (Harrison 1978). Does not breed until 4th yr (Johnsgard 1975a).

Niche: Eats mostly waste cereal; also many insects and rodents (Eckert and Karalus 1981). Particularly sensitive to human disturbance when nesting, especially within a mile of the nest-site. Grazing is detrimental (Marcot 1979).

Presence within BAA: There are many known sightings within the BAA .None within the THP or within the limiting distance from the THP. The sightings are generally on the south end of Jess Valley on the Flournoy Ranch, Sections 1, 11, 12, 13, and 14, T40N, R14E. The sightings are 1.5 to 3 miles from the THP boundary.

Response: Due to the distance from the THP area, the RPF anticipates no significant adverse impacts to sandhill crane nesting activities.

Considering the protection provided within the assessment area by the FPRûs and those described in this THP (e.g., the response to Item 32(a) in Section II), operations on this plan should not have a significant impact on this species.

Prairie Falcon (*Falco mexicanus*)

Status: CDF&G Species of Special Concern.

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: an uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner Coast Ranges and Sierra Nevada. Distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. Not found in northern coastal fog belt, or along the coastline.

SPECIFIC HABITAT REQUIREMENTS

Feeding: Eats mostly small mammals, some small birds, and reptiles. Catches prey in air and on ground in open areas. Dives from a perch with rapid pursuit, or dives from searching flight 15-90 m (50-300 ft) above ground.

Cover: Requires sheltered cliff ledges for cover.

Reproduction: Usually nests in a scrape on a sheltered ledge of a cliff overlooking a large, open area. Sometimes nests on old raven or eagle stick nest on cliff, bluff, or rock outcrop. Aerial courtship display occurs near nest site. Southeast-facing nest site apparently preferred, but height and orientation secondary to nature and character of the ledge.

Water: Denton (1975) reported 76% of eyries had water within 0.4 km (0.25 mi). Reported bathing (Skinner 1983a)

Pattern: Uses open terrain for foraging; nests in open terrain with canyons, cliffs, escarpments, and rock outcrops.

SPECIES LIFE HISTORY

Activity Patterns: Yearlong, diurnal activity. Much time spent perching near eyrie. Forages mostly early morning and late afternoon, except when feeding nestlings or prey scarce.

Seasonal Movements/ Migration: Migrants from north, winter in California. Some residents wander upslope in summer and downslope for winter.

Home Range; Home range of a breeding pair was 26 km2 (10 mi2) in Wyoming (Craighead and Craighead 1956)

Territory: Territory and home range probably the same. Intensively defends territory. Breeding territory was 5.7 to 6.5 km2 (2.2 to 2.5 mi2) in Utah (Smith and Murphy 1973). Active nests have been recorded within 200 m (636 ft) of one another (Enderson 1964, Garrett and Mitchell 1973), in sites where individuals did not confront or see each other regularly. Thus, relative orientation of

potential nest sites probably more important that actual distance from another potential site.

Reproduction: Breeds from mid-February through mid-September, with peak April to early August. Clutch size 3-6 eggs, average 5. Mean laying date for 280 records 1900-1977 was April 4-11 (Walton 1977). Fledging success over 5 year for 135 nests averaged 3.2 young, ranging 0-5; 19% of the nests had 5 young (Walton 1977). Young begin to disperse in June and July. May live as long as 13-20 years (Enderson 1969, Denton 1973).

Niche: Vulnerable to DDE poisoning. Egg and nestling predation occurs at sites accessible to mammal predators, great horned owls, and golden eagles. May compete with red-tailed hawks for food and nest sites, and with great horned owls and ravens for nest sites.

Presence within BAA: There are 2 recorded occurrences within the BAA. There are no known occurrences within the THP area.

Response: Occurrence 220 and 228 are more than 1.5 miles from the THP. Due to the distance from the THP area, the RPF anticipates no significant adverse impacts to nesting sites or foraging areas.

Considering the protection provided within the assessment area by the FPRûs and those described in this THP (e.g., the response to Item 32(a) in Section II), operations on this plan should not have a significant impact on this species

Guidelines for nests or birds discovered within the harvest area:

1) If goshawks, unlisted raptors or other listed birds are discovered roosting or nesting within the harvest area, harvesting will be suspended immediately and notification will be made to CDF and DF&G of the location.

2) During timber operations, nest trees(s),, designated perch trees(s), screening trees(s), and replacement trees(s), shall be left standing and unharmed except as otherwise provided in the following rules

3) Timber operations shall be planned and operated to commence as far as possible from occupied nest trees.

4) When an occupied nest site of a listed bird species is discovered during timber operations, the timber operator shall protect the nest tree, screening trees, perch trees, and replacement trees and shall apply the provisions of subsection (2) and (3) above and shall immediately notify the DF&G and the CDF. An amendment that shall be considered a minor amendment to the timber harvesting plan shall be filed reflecting such additional protection as is agreed between the RPF and the Director after consultation with the DF&G.

5) If any of the following birds or nests is discovered roosting or nesting within the harvest area or equal to or less than the ñimiting distancesòprovided below by species, harvesting

will be suspended immediately and notification will be made to CDF and DF&G of the location.

Limiting Distances by Species:

Bald Eagle ï	0.5 miles (2640 feet)
Great Gray Owl -	0.25 miles (1320 feet)
Northern Goshawk -	0.25 miles (1320 feet)
California Spotted Owl -	1.3 miles
Willow flycatcher -	300 feet
Prairie falcon -	0.5 miles (2640 feet)
Greater Sandhill Crane -	0.5 miles (2640 feet)
Osprey -	0.25 miles (1320 feet)

6) Implementation of a buffer zone, as required by 939.3(a), will be made immediately.

7) Where a nest tree is discovered which has not already been identified, the nest tree will be protected, together with several adjacent screening trees.

MAMMALS

Wolverine (*Gulo gulo*)

Status: State listed as Threatened

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: A scarce resident of North Coast mountains and Sierra Nevada. Sightings range from Del Norte and Trinity cos. east through Siskiyou and Shasta Cos., and south through Tulare Co. A few possible sightings occur in the north coastal region as far south as Lake Co. Habitat distribution in California is poorly known for the North Coast and northern Sierra Nevada. In north coastal areas, has been observed in Douglas-fir and mixed conifer habitats, and probably uses red fir, lodgepole, wet meadow, and montane riparian habitats. Most sightings in this region range from 500-1500 m (1600-4800 ft). In the northern Sierra Nevada, they have been found in mixed conifer, red fir, and lodgepole habitats, and probably use subalpine conifer, alpine dwarf-shrub, wet meadow, and montane riparian habitats. Elevations in the northern Sierra Nevada mostly fall in the range of 1300-2300 m (4300-7300 ft). Habitats used in the southern Sierra Nevada include red fir, mixed conifer, lodgepole, subalpine conifer, alpine dwarf-shrub, barren, and probably wet meadows, montane chaparral, and Jeffrey pine. Elevations in the southern Sierra Nevada mostly are from 2000-3400 m (6400-10,800 ft). May travel extensively. There are indications that wolverines may be increasing in California (Grinnell et al. 1937, Ingles 1965, Yocom 1973, 1974, Johnson 1977, Schempf and White 1977, California Department of Fish and Game 1980a).

SPECIFIC HABITAT REQUIREMENTS

Feeding: Feed primarily on small mammals and carrion (Grinnell et al. 1937, Ingles 1965, Hornocker and Hash 1981, Krott 1982). Prey includes marmots, ground squirrels, gophers, mice, deer carcasses, other vertebrates, berries, and insects. May kill large snowbound prey, but most large prey found by scavenging carrion. May drive bears or mountain lions from carcasses. Forage in open to sparse tree habitats on ground, in trees, burrows, among rocks, in or under snow, and sometimes in shallow water. May locate prey under deep snow. Caches food.

Cover: Prefer areas with low human disturbance. Use caves, hollows in cliffs, logs, rock outcrops, and burrows for cover, generally in denser forest stages.

Reproduction: Den in caves, cliffs, hollow logs, cavities in the ground, under rocks; may dig dens in snow, or use old beaver lodges (Thomas 1979).

Water: Must drink water.

Pattern: Hunt in more open areas, using dense cover for resting and reproduction.

SPECIES LIFE HISTORY

Activity Patterns: Largely nocturnal, but may be active at any time of day. Active yearlong.

Seasonal Movements/Migration: Frequently travel long distances; may leave usual home range for many days. Travels may take them out of normal elevation and habitats.

Home Range: The yearly range in Montana was 422 km² (156 mi²) for males, and 388 km² (144 mi²) for females (Hornocker and Hash 1981). A hunting route circumscribed a range of about 2070 km² (800 mi²) (Gilbert 1970). Daily movements of up to 32 km (19.4 mi) occurred in Montana (Hornocker and Hash 1976), and can travel 10-15 km (6-9 mi) without rest (Nowak and Paradiso 1983). Distances between locations ranged from 5-133 km (3.1-81 mi) (Hornocker and Hash 1976). The size and shape of a home range is not affected by mountains, rivers, highways, or other major topographical features. Wide-ranging young males may colonize new ranges. Hornocker and Hash (1981) reported a density of 1/65 km² (25 mi²).

Territory: May be intolerant of one another, and scent mark their home ranges. Individuals of the same sex and yearlings may be driven out (Krott 1982), but there is much overlap between home ranges. Spacing is maintained in time, but not space (Hornocker and Hash 1981), thus territorial defense is infrequent. Several females may have home ranges within the range of a single male.

Reproduction: Probably polygamous, and mate from May to July. Active gestation is 30-40 days, but because of delayed implantation, full gestation period may last 215-272 days. The young are born from January through April. One litter/yr produced, averaging 3.5 (usually 2-4, ranging from 1-5). Young weaned in 7-9 wk, and sexually mature in second or third yr. Not all females reproduce each year (Wright and Rausch 1955, Rausch and Pearson 1972, Hornocker and Hash 1981, Nowak and Paradiso 1983). A captive individual lived 17 yr.

Niche: A predator and scavenger. It may benefit from the kills of mountain lions. Predation usually is not an important source of mortality, but in one study wolves preyed on wolverines (Krott 1982).

Comments: Have low population densities, even in best of range. Probably never common in California. Trapping, human disturbance, and grazing of high Sierra Nevada meadows have contributed to decline, a trend which may now be reversing (Schempf and White 1977).

Presence within BAA: There are no known sightings within the BAA, or the THP.

Response: Denning habitat within the THP is low both before and after operations in the selection area, but foraging habitat will increase post harvest. In the conversion area, the habitat is low but will be non-existent after operations.

Considering the lack of observations and protection provided within the assessment area by the FPRûs and those described in this THP (e.g., the response to Item 32(a) in Section II), operations on this plan should not have a significant impact on this species

American Badger (*Taxidea taxus*)

Status: State listed as a Species of Special Concern

DISTRIBUTION, ABUNDANCE, AND SEASONALITY: an uncommon, permanent resident found throughout most of the state, except in the northern North Coast area (Grinnell et al 1937). Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.

SPECIFIC HABITAT REQUIREMENTS

Feeding**:** Badgers are carnivorous. They eat fossorial rodents; rats, mice, chipmunks, and especially ground squirrels and pocket gophers. Also eats some reptiles, insects, earthworms, eggs, birds, and carrion. Diet shifts seasonally and yearly in response to availability of prey.

Cover: Badgers dig burrows in friable soil for cover. Frequently reuse old burrows, although some may dig a new den each night, especially in summertime (Messick and Hornocker 1981)

Reproduction: Young are born in burrows dug in relatively dry, often sandy, soil, usually in areas with sparse overstory cover.

Water: No data found

Pattern: Suitable habitat for badgers is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils.

SPECIES LIFE HISTORY

Activity Patterns: Active yearlong. Nocturnal and diurnal. Variable periods of torpor in winter (Long 1973)

Seasonal Movements/Migration: Non-migratory. Area used during winter smaller than at other seasons.

Home Range: Home range estimates vary geographically and seasonally. In Utah, Lindzey (1978) found fall and winter home ranges of 5 females varied from 137-304 ha (338-751 ac). Those of 2 males varied from 537-627 ha (1327-1549 ac). In Idaho, Messick and Hornocker (1981) found that home ranges of 7 adult females and 3 males averaged 160 ha (400 ac) and 240 ha (600 ac), respectfully.

Territory: Little information available. Family members may share the territory of a female (Seton 1929). However, males generally are solitary, except in the breeding season (Messick and

Hornocker 1981).

Reproduction: Badgers mate in summer and early fall. Gestation period varies from 183-265 days, including delayed implantation. Embryo implants about 45 days prior to birth. An average litter of 2-3 (range=2-5) born mostly in March and April (Long 1973). A few females may breed in first year. Males not mature sexually until second year. Badgers 11-15 years old have been reported (Flower 1931, Jackson 1961, Long 1973, Messick and Hornocker 1981)

Niche: Badgers are highly specialized fossorial mustelids that help control small mammal populations. Somewhat tolerant of human activities, however, predator control using indiscriminate trapping and persistent poisons causes extensive losses.

Presence within BAA: There are no known sightings within the BAA, or the THP.

Response: Considering the protection provided within the assessment area by the FPRûs and those described in this THP (e.g., the response to Item 32(a) in Section II), operations on this plan should not have a significant impact on this species

SECTION IV – Cumulative Impacts
(PART OF PLAN)
“Brooks Mill THP”

Pacific fisher (*Martes pennanti pacifica*)

Status: State listed as a Species of Special Concern

Taxonomic Remarks: Mustelids are characterized by the loss of the carnassial notch from the upper fourth premolar, a delicate zygomatic arch, five digits that contact the surface when walking, and enlarged anal scent glands (Buskirk 1994). There are seven species in the genus Martes (Mustelidae, Carnivora) (Buskirk 1994). The fisher (M. pennanti), the largest member of the genus, is endemic to North America. One congener, the American marten (M. americana), also occurs in North America. Goldman (1935) recognized 3 subspecies of fisher, M. p. pennanti, M. p. columbiana, and M. p. pacifica. The validity of these subspecies was questioned by Hagmeier (1959), who found no morphological characteristics on which to separate the subspecies. Nevertheless, Hall (1981) and Anderson (1994) retained the three subspecies (Powell and Zielinski 1994).

Distribution: Before European settlement, fishers occurred in forests across North America. They were in the Appalachian Mountains as far south as Tennessee and in the Midwest to southern Illinois in appropriate forest types. They ranged along the Rocky Mountains at least into Wyoming, and down the West Coast to the southern Sierra Nevada (Grinnell et al. 1937, Powell 1993, Gibilisco 1994). Following European settlement of the continent, fisher range contracted drastically, particularly in the southern portions, due to deforestation and trapping (Powell 1993). In California, Grinnell et al. (1937) described the original range of the fisher as including the northern Coast Range, Klamath Mountains, southern Cascades, and western slope of the Sierra Nevada (Zielinski et al. 1995). Recent empirical data indicate that fishers currently occur in two widely separated regions of the state: the northwest, including the northern Coast Range and Klamath Province, and the southern Sierra Nevada (Zielinski et al. 1995).

Life History: In western North America, fishers are associated with late-successional conifer forests (Buskirk 1994). Powell and Zielinski (1994) hypothesized that forest structure was more important than tree species for fisher habitat. Structure, including a diversity of tree sizes, snags, downed trees and limbs, and understory vegetation, provides den and rest sites and prey for fishers. Generalized predators, fishers prey on a variety of small and medium-sized birds and mammals, and on carrion (Powell 1993). Where they occur, snowshoe hares (Lepus americana) are important prey. Fisher diets also include mice (Microtus sp., Clethrionomys sp., Peromyscus sp.), squirrels and chipmunks (Sciurus sp., Glaucomys sp., Tamiasciurus sp.), and porcupines (Erethizon dorsatum) (Powell and Zielinski 1994, Martin 1994). Female fishers can breed at one year of age. Parturition occurs in March and April; females come into estrous and breed 3-9 days later (Powell and Zielinski 1994). Implantation is delayed about ten months, and can occur from January to April. Typical litter size is two or three. Natal dens are high in cavities in both live and dead trees. Fishers exhibit intrasexual territoriality. Male home-range size, 40 km2 (range 19-79), is nearly three times that of females (15 km2; range 4-32) (Powell and Zielinski 1994).

Habitat: Fishers in the western United States are associated with habitats that have high canopy closure; these typically are late-successional forests (Buskirk and Powell 1994, Powell and Zielinski 1994). They apparently are restricted to areas without frequent deep, fluffy snow, which is thought to restrict their movements. Resting and denning occur in large live trees, snags, and logs associated with late-successional forests.

Status: Class I. The status of the fisher in California has been of concern for most of this century. Dixon (1925) believed that the fisher was close to extinction in California and proposed that protective measures be taken. Trapping of fishers was prohibited in 1946. Subsequent assessments of the status of the fisher in California concluded that they occurred at relatively high density in the northwestern and North Coast areas of the state, were present at lower density in the southern Sierra Nevada, and were extremely rare or absent between (Schempf and White 1977). The USFWS recently denied a petition to list the fisher on the West Coast (Washington, Oregon, and California) and in the Rocky Mountains (Idaho, Montana, and Wyoming) as Threatened under the Federal Endangered Species Act. The stated reason was that "the petition did not present substantial information indicating that the two fisher populations [West Coast and Rocky Mountains] in the western United States requested to be listed constitute distinct vertebrate population segments" (Federal Register 61(42):8016). Recent detection efforts throughout the historic range of the fisher in California indicate that fishers occur in two disjunct populations, a larger one in the northwestern part of the state and a smaller one in the southern Sierra Nevada, separated by approximately 420 km (Zielinski et al. 1995). These data were not available when the petition to Federally list the fisher was filed. M. pennanti pacificus may meet CESA criteria for listing as Threatened in California. Its current disjunct distribution, with a relatively small population in the southern Sierra Nevada, separated from a larger one in northwestern California by more than 400 km, and potential effects of forest management practices on it, are causes for serious concern for its continued existence as a well distributed, native species. [Editorôs note: Fisher was petitioned for state listing in 2008. The petition evaluation report is available at http://nrm.dfg.ca.gov/documents, and the status evaluation prepared for the species will also be available on the Departmentôs website after its receipt by the Fish and Game Commission in late 2009 or early 2010.]

Niche: Few animals prey on fishers other than humans. Fishers are one of the few specialized predators on porcupines. Have been transplanted into Oregon, West Virginia, and other states for porcupine control (Hooven 1971, Powell 1981a 1981b, 1982). Long term studies suggest that fishers predominantly are terrestrial (Powell 19811b).

Presence within BAA: There is one known sighting within the BAA, but none within the THP. The USFS sighting in Section 25 was in 1972.

Response: Generally, fishers need conifers (>32 inches dbh) and hardwoods (>16 inches dbh) with moderate canopy closure (>50%) for denning and resting sites. The spatial distribution of the conifers within the Selection unit varies from small clumps to individual scattered trees. The conifer QMD is approximately 16-18 inches dbh with a few trees over 30 inch dbh. There are small clumps of conifers that have greater than 50% canopy closure, but in general, the canopy closure is open and does not support denning and resting sites for the fisher. The foraging habitat within the THP may increase following operations

Recent studies of fisher habitat use, occurrence, and movement patterns indicate fisher also use intensively managed forest habitats of lower tree age, structure and canopy closure, but with snag/large tree attributes remaining for nesting/denning;

Considering the protection provided within the assessment area by the FPRôs and those described in this THP (e.g., the response to Item 32(a) in Section II), operations on this plan should not have a significant impact on this species

Sierra Nevada Red Fox (*Vulpes vulpes necatro*)

Status: State listed as Threatened

DISTRIBUTION, ABUNDANCE, AND SEASONALITY

Sierra Nevada populations may be found in a variety of habitats, including alpine dwarf-shrub, wet meadow, subalpine conifer, lodgepole pine, red fir, aspen, montane chaparral, montane riparian, mixed conifer, and ponderosa pine. Jeffrey pine, eastside pine, and montane hardwood-conifer also are used. Hunts small and medium sized mammals, ground squirrels, gophers, mice, marmots, woodrats, pikas, and rabbits. Other vertebrates, insects, carrion, fruits, and earthworms used occasionally. Hunts in meadows, fell-fields, grasslands, wetlands, and other open habitats. Cashes food. Uses dense vegetation and rocky areas for cover and den sites. Den sites include rock outcrops, hollow logs and stumps, and burrows in deep, loose soil. May move pups to new den several times. Sierra red foxes move downslope in winter into ponderosa pine and mixed conifer, upslope in summer to lodgepole pine, subalpine conifer, alpine dwarf-shrub, and red fir habitats (Ziener et al. 1990).

SPECIFIC HABITAT REQUIREMENTS

Feeding: Hunts small and medium-sized mammals, ground squirrels, gophers, mice, marmots, woodrats, pikas, and rabbits. Apparently an increasingly important predator of ground-nesting waterfowl, shorebirds, upland game birds, and eggs in lowland California and other areas. Other vertebrates, insects, carrion, fruits, and earthworms used occasionally; carrion important in winter, as are lagomorphs. Hunts in meadows, fell-fields, grasslands, wetlands, and other open habitats. Caches food (Scott 1955, Scott and Klimstra 1955, Sargent 1972, 1978, Ewer 1973, MacDonald 1980, Maccarone and Montevecchi 1981, Samuel and Nelson 1982, Yoneda 1982).

Cover: Uses dense vegetation and rocky areas for cover and den sites.

Reproduction: Den sites include rock outcrops, hollow logs and stumps, and burrows in deep, loose soil (Grinnell et al. 1937, Ables 1975). May move pups to new den several times.

Water: Captive red foxes did not require free water as pups or adults (Sargent 1978).

Pattern: In Sierra Nevada, prefers forests interspersed with meadows or alpine fell-fields. Open areas are used for hunting, forested habitats for cover and reproduction. Edges are utilized extensively (Seidensticker 1999). In lowlands, uses fence lines, hedgerows, woodlots, and other brushy, wooded areas for cover and reproduction, and hunts in cropland, wetland, urban habitats and other open areas (Grinnell et al. 1937. Ables 1975, Samuel and Nelson 1982).

SPECIES LIFE HISTORY

Activity Patterns: Active yearlong; hunts day and night (Grinnell et al. 1937, Ables 1975).

Seasonal Movements/Migration: None in many habitats. Sierra red foxes move downslope in winter into ponderosa pine and mixed conifer, upslope in summer to lodgepole pine, subalpine conifer, alpine dwarf-shrub, and red fir habitats (Grinnell et al. 1937, Schempf and White 1977).

Home Range: Summer home ranges in alpine and subalpine tundra of British Columbia averaged 1611 ha (3979 ac), varying from 277-3420 ha (684-8447 ac) (Jones and Theberge 1982). In Minnesota, Illinois, and Wisconsin, home ranges averaged 700 ha (1728 ac) and varied from 155-1554 ha (384-3840 ac) (Sargent 1972, Storm et al. 1976). Red foxes have been known to travel up to 395 km (245 mi). Home range size is influenced by food abundance and habitat.

Territory: The male defends the territory, which is shared by the mated pair and pups. Defense consists of display, scent-marking, chasing, and rare physical conflict (Preston 1975). The entire home range may be defended, or territoriality may break down in times of food abundance (Orr 1971, Zarnoch et al. 1977, Samuel and Nelson 1982, Seidensticker 1999).

Reproduction: Mating takes place in late winter (January-March. After a gestation period of 52 days, young are born in early spring (March-May). Litter sizes in many studies averaged about 5. Most litters are 4-6, though range is 1-12 (Grinnell et al. 1937, Samuel and Nelson 1982). There is 1 litter/yr. Lactation continues 56-70 days (Seidensticker 1999). Pups dependent on parents for 6 mo, and become sexually mature at 10 mo (Orr 1971, Zarnoch et al. 1977).

Niche: Coexists with coyotes in Sierra Nevada, and with gray and kit foxes and coyotes in lowland California. Numbers apparently increase when numbers of coyotes and other predators decrease, through predator control or natural factors (Schmidt 1986). Sierra Nevada populations apparently reduced by grazing in meadows, which reduces prey populations, and by trapping, logging, and recreational disturbance (Grinnell et al. 1937, Schempf and White 1977).

Comments: Sierra Nevada red foxes are rare, and numbers may be continuing to decline (Schempf and White 1977). Lowland populations, presumably introduced, are expanding in range and numbers (Gray 1977, Gould 1980).

Presence within BAA: There are no known sightings within the BAA, or the THP.

Response: Denning potential and foraging potential for red fox within the selection unit will not be significantly altered from the current status. In the conversion area, denning potential will be reduced due to the lower basal area, and foraging potential may increase due to the increased prey species.

Considering the protection provided within the assessment area by the FPRûs and those described in this THP, operations on this plan should not have a significant impact on this species

American Marten (*Martes Americana*)

DISTRIBUTION, ABUNDANCE, AND SEASONALITY

Uncommon to common, permanent resident of North Coast regions and Sierra Nevada, Klamath, and Cascades Mts. Optimal habitats are various mixed evergreen forests with more than 40% crown closure, with large trees and snags. Important habitats include red fir, lodgepole pine, subalpine conifer, mixed conifer, Jeffrey pine, and eastside pine (Grinnell et al. 1937, Schemof and White 1977, Clark et al. 1987).

SPECIFIC HABITAT REQUIREMENTS

Feeding: American martens are mostly carnivorous, taking primarily small mammals: tree squirrels, chipmunks, mice, shrews, rabbits, hares, and pikas. Spring through autumn; often eat birds, insects, and fruits. Eat fish, and will forage along edge of water (Haley 1975). Forage on ground, and in trees, snags, logs, and rock areas. May tunnel under snow. Search and pounce on, or chase prey. Use forepaws to remove birds from tree cavities. Individuals may travel up to 24 km (15 mi) hunting in 1 night.

Cover: Use cavities in large trees, snags, stumps, logs, or burrows, caves, and crevices in rocky areas for denning cover. Less commonly will den in woodpiles, cabins, and other human artifacts. Also may den under snow near logs, stumps, or other objects.

Reproduction: Nests are located in cavities, as described above, lined with leaves, grass, mosses, or other vegetation.

Water: No information found.

Pattern: Habitat with limited human use is important. Martens require a variety of different-aged stands, particularly old-growth conifers and snags, which provide abundant cavities for denning and nesting. Tend to travel along ridge tops, and rarely move across large areas devoid of canopy cover. Small clearings, meadows, and riparian areas provide foraging habitats, particularly during snow-free periods. Little information available on the interspersion of habitats required by this species.

SPECIES LIFE HISTORY

Activity Patterns: Active yearlong. Mostly nocturnal and crepuscular, some diurnal activity.

Seasonal Movements/Migration: Non-migratory, although may move to lower elevations in winter.

Home Range: In Montana, home ranges of males averaged 238 ha (589 ac), and varied from 88-262 ha (218-646 ac). Home ranges of females averaged 70 ha (173 ac), and varied from 8-52 ha (19-128 ac) (Hawley and Newby 1957). Home ranges often coincide with topographical or vegetation features, such as timber stands, ridges, streams, meadows, or burns.

Territory: Territory may equal home range; antisocial behavior between males observed within a male's home range. In contrast, males and females tolerant of each other, and adults tolerant of juveniles, in other observations.

Reproduction: Breed in summer; have a gestation of 220-290 days, including delayed implantation (Maser et al. 1981). Embryos usually implanted in uterus during February, having an active growing period of about 27 days prior to birth. Most litters born in March and April, some as late as June. One litter/yr of an average 3.5 young, ranging from 1-5. Young stay with female until autumn, and then begin solitary life. Males are mature sexually at 1 yr, females at 2 yr.

Niche: Occasionally prey of fishers, bobcats, great horned owls, and eagles (deVos 1952). Agile climbers, and mostly arboreal. Population levels appear to follow primary prey abundance. Sensitive to human disturbance, and trapped easily. Potentially compete with other carnivorous forest-dwelling mammals and birds, such as fishers, bobcats, spotted owls, great horned owls, and accipiters. Competition for den sites may occur with other cavity using species.

Presence within BAA: There are no known sightings within the BAA, or the THP.

Response: Denning potential for marten within the THP will not be significantly altered from the current status within the selection unit. Foraging potential within the selection unit may be high due to the high populations of rodents observed by the RPF. The conversion area will alter denning and foraging. However due to the lack of a population in the area there will no affect on this species.

Considering the protection provided within the assessment area by the FPRûs and those described in this THP (e.g., the response to Item 32(a) in Section II), operations on this plan should not have a significant impact on this species

FISH

Goose Lake Redband Trout (*Onchynchus mykiss newberrii*)

Status: California Species of Special Concern-

Description**:** The following description is based on the Sheepheaven Creek population, McCloud Redband Trout (Hoopaugh 1974, Gold 1977) that seems to have a narrower range of characters than is found throughout the range of the subspecies. Behnke (1992), however, considers this population to best represent the subspecies because it is unlikely to have had any history of hybridization with introduced rainbow trout. Overall body shape of this redband trout is similar to the ñtypicalòtrout shape as exemplified by rainbow trout. It has a yellowish to orange body color with a brick-red lateral stripe. The dorsal, anal, and pelvic fins are white tipped. Adults retain parr marks. Gill rakers number from 14-18 (average=16), which is the lowest number known from any rainbow trout population (Behnke 1992). Pyloric caeca number 29-42, which is also low. However, the number of scales along the lateral line (153-174) and above the lateral line (33-40) are greater than in most rainbow trout. Pelvic fin rays are 9-10 and branchiostegal rays range from 8-11. Many, but not all, of the trout have basibranchial teeth, a characteristic normally associated with cutthroat trout.

Taxonomic Relationships**:** The taxonomic status of redband trout has been under much debate. Legendre et al. (1972) suggested that redband trout are interior rainbow trout closely related to the group of trout that includes Arizona trout *(O. apcache),* Gila trout *(O. gilae),* Kern River rainbow trout *(O. m. gilberti),* golden trout *(O. m. aguabonita),* and Mexican golden trout *(O. chrysogaster).* However, Miller (1972) disputed this relationship, suggesting instead that redband trout represent a derivative of an ancestral form that also gave rise to the California golden trout. Recent electrophoretic studies by Berg (1987) suggest that the three known redband lineages (inland redband, **Goose Lake redband**, and McCloud redband), were independently derived from a ñcoastal rainbow trout-likeòcommon ancestor and are now genetically distinct lineages that warrant recognition as subspecies of rainbow trout. Behnke (1992) places redband trout from the McCloud drainage in the subspecies *O. mykiss stonei,* along with populations of presumed redband trout from the Pit River drainage. He states, however, that *"stonei* is not a biological subspecies - only a practical one (p. 190).òGiven the uncertain (but probably hybridized) nature of the Pit River ñredbandsò(Berg 1987) and the evidence that the McCloud River fish represent a distinct evolutionary lineage, there is little reason not to recognize it as a biological subspecies.

Life History**:** Little is known about the life history of this fish. Redband trout seem to be in reproductive condition in June, suggesting that they spawn in late spring. The fish spawn in the tributaries of the Goose Lake basin, upper Pit River and headwaters and the South Fork Pit River drainage. Fish to 12 inches are found in the smaller streams, while larger fish are found in Goose Lake.

Distribution**:** Goose Lake redband trout are present in most of the major tributaries of Goose Lake, spawning and resident distribution is highly fragmented and limited to headwater and some mid-order reaches. Historically, all streams maintained hydrologic connection to Goose Lake and other streams. Data describing the abundance of constituent populations of the Goose Lake SMU over the last 30 years are not available. The major concern in the viability of the Redband Trout is the

fluctuations of stream flows do to drought conditions and the concerns with water temperature. Do to these intermittent stream flows.

Abundance**:** There is little information available on the trends of redband trout populations. However, abundance of redband trout fluctuates with instream flows and habitat quality. Migratory redband trout are present when rearing conditions in Goose Lake are adequate, though irrigation activities and degraded habitat quality hinder movement between the lake and the spawning grounds.

Nature and Degree of Threat**:** Long-term survival of populations of redband trout in small creeks poses problems because the streams may be largely dry during drought years and the process accelerated by poor watershed management, including grazing of livestock in the riparian areas. Many such streams are located on private or National Forest land managed for timber harvest, so minimal attention is paid to managing the streams for native trout. The populations are more secure in Goose Lake, because of its size and the high water quality of the springs that feed it.

Presence within BAA: Red Band Trout are known to be found within the BAA (Mill Creek and Soup Creek). There are recorded sightings within the THP area in Soup Creek.

Response: Soup Creek and tributaries are covered by light to moderate thickets of riparian vegetation, also in the lower reaches of Soup Creek meadows and pasturelands extend the WLPZ's and ELZ's. Additionally, the post harvest seeding of the conversion area will increase ground cover and reduce the potential for sediment transport.

Considering the protection provided within the assessment area by the FPR's and those described in this THP (e.g., the response to Item 32(a) in Section II), operations on this plan should not have a significant impact on this species

Plants-

The DF&G Natural Diversity Data Base (NDDB- 2 quad search) and California Native Plant Society (CNPS-9 quad search), consultation with the USFS, and Martin J. Lenzô botanical survey (Section V) were used to identify species and their habitats within the Cumulative Assessment Area, and to identify possible habitats within the THP area:

Grass alisma (*Alisma gramineum*):

Status: CNPS List 2.2

Habitat: is found in marshes and swamps at elevations from 1200-5900 feet. Rhizomatous herb aquatic which blooms from Jun-Aug.

Presence within BAA: **Grass alisma** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet areas) does not exist within the operational portions of the THP.

Masonic rock cress (*Arabis cobrensis*):

Status: CNPS List 2.3

Habitat: is found in sandy areas in Pinyon and juniper woodland, Great Basin scrub at elevations from 4500-10200. Perennial herb which blooms from Jun-July.

Presence within BAA: **Masonic rock cress** has not been documented within the BAA, or within the THP area.

Response: These communities (Pinyon and juniper woodland, Great Basin scrub) are not within the operational areas of the THP.

Hillside arnica (*Arnica fulgens*):

Status: CNPS List 2.2

Habitat: is found in meadows and seeps in lower montane coniferous forests at elevations from 4900-8800 ft. Rhizomatousl herb which blooms from May-Jul

Presence within BAA: **Hillside arnica** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet areas) does not exist within the operational portions of the THP.

Falcate saltbush (*Atriplex gardneri* var. *falcata*):

Status: CNPS List 2.2

Habitat: is usually found in alkaline areas in the Great Basin scrub, Chenopod scrub at elevations from 3900-5600 ft. Perennial herb which blooms from May-Aug

Presence within BAA**: Falcate saltbush** has not been documented within the BAA, or within the THP area.

Response: This habitat (alkaline areas) is not found within the operational areas of the THP. These communities (Great Basin scrub, Chenopod scrub) are not within the operational areas of the THP

Dwarf resin birch (*Betula glandulosa*):

Status: CNPS List 2.2

Habitat: is found in meadows and seeps, marshes and swamps in lower montane coniferous forests and subalpine coniferous forest at elevations from 4250-7500 ft. Deciduous shrub which blooms from May-Jun

Presence within BAA**: Dwarf resin birch** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet areas) does not exist within the operational portions of the THP.

Upswept moonwort (*Botrychium ascendens*)

Status: CNPS List 2.3

Habitat: is found in meadow and seeps in lower montane coniferous forests at elevations from 4900-7400 ft. Rhizomatous herb which blooms from Jul-Aug

Presence within BAA: **Upswept moonwort** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet areas) does not exist within the operational portions of the THP.

Scalloped moonwort (*Botrychium crenulatum*):

Status: CNPS List 2.2

Habitat: is found in meadows and seeps, marshes and swamps in lower montane coniferous forests, upper montane coniferous forest at elevations from 4100-10700 ft. Rhizomatous herb which blooms from Jun-Sept.

Presence within BAA: **Scalloped moonwort** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet areas) does not exist within the operational portions of the THP.

Common moonwort (*Botrychium lunaria*)

Status: CNPS List 2.3

Habitat: is found in meadows and seeps in subalpine coniferous forest, upper montane coniferous forest at elevations 7500-11100 feet. Rhizomatous herb, blooms Jul-Aug

Presence within BAA**: Common moonwort** has not been documented within the BAA, but not within the THP area.

Response: This habitat, (wet areas) does not exist within the operational portion of the THP. The operational portion of the THP is above the elevation range of this species.

Mingan moonwort (*Botrychium minganense*):

Status: CNPS List 2.2

Habitat: is found in bogs and fens in lower montane coniferous forest, upper montane coniferous forest at elevations 4700 -6700 feet. Rhizomatous herb blooms Jul-Sep

Presence within BAA: **Mingan moonwort** is not known to have been documented within the BAA, or within the THP area.

Response: This habitat, (wet areas) does not exist within the operational portion of the THP.

Mud sedge (*Carex limosa*):

Status: CNPS List 2.2

Habitat: is found in meadows and seeps, marshes and swamps, bogs and fens in lower and upper coniferous forest at elevations from 3900-8900 ft. Rhizomatous herb blooms Jun ï Aug

Presence within BAA: **Mud sedge** has not been documented within the BAA, or within the THP area.

Response: This habitat, (wet areas) does not exist within the operational portion of the THP.

Liddon's sedge (*Carex petasata*):

Status: CNPS List 2.3

Habitat: is found in meadows and seeps in Pinyon and juniper woodland, lower montane coniferous forest, broad leafed upland forest at elevations from 1900-10900 ft. Perennial herb which blooms from May ï Jul

Presence within BAA: **Liddon's sedge** has not been documented within the BAA, or within the THP area.

Response: This habitat, (wet areas) does not exist within the operational portion of the THP.

Sheldon's sedge (*Carex sheldonii*):

Status: CNPS List 2.2

Habitat: is found in marshes and swamps in lower montane coniferous forests, riparian scrub at elevations from 4000-6600 ft. Rhizomatous herb which blooms from May-Aug

Presence within BAA: **Sheldon's sedge** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet areas), does not exist within the operational portion of the THP.

Western valley sedge (Carex *vallicola*):

Status: CNPS List 2.3

Habitat: is found in meadows and seeps in Great Basin scrub at elevations from 5000-9200 ft. Rhizomatous herb which blooms from Jul-Aug

Presence within BAA: **Western valley sedge** has not been documented within the BAA, or within the THP area.

Response: This habitat, (wet areas) does not exist within the operational portion of the THP. This community (Great Basin scrub) is not within the operational areas of the THP

Fell-fields claytonia (*Claytonia megarhiza*)

Status: CNPS List 2.3

Habitat: is found in rocky or gravelly areas, alpine boulder and rock fields in Subalpine coniferous forest at elevations 8500 feet to11600 feet. Perennial herb, blooms Jul- Sept

Presence within BAA: **Fell-fields claytonia** is not known to have been documented within the BAA or the THP area.

Response: This habitat (alpine boulder rocky) is not found within the operational areas of the THP. The operational portion of the THP is below the elevational range of this species.

Yakima bird's-beak (*Cordylanthus capitatus*):

Status: CNPS List 2.2

Habitat: is found in Pinyon and juniper woodland, lower montane coniferous forests, and Great Basin scrub at elevations from 5900-7800 ft. Annual herb hemi-parasitic which blooms from Jul-Sep

Presence within BAA: **Yakima bird's-beak** has not been documented within the BAA, or within the THP area.

Response: The operational portion of the THP is below the elevational range of this species.

Spiked larkspur (*Delphinium stachydeum*):

Status: CNPS List 2.3

Habitat: is found in rocky areas in Great Basin scrub, upper montane coniferous forest at elevations from 4200-8500 ft. Perennial herb which blooms from Jun-Aug

Presence within BAA**: Spiked larkspur** has not been documented within the BAA, or within the THP area.

Response: The habitat may occur within the operational areas of the THP, but a floral survey did not locate any occurrences. Considering the protection provided within the assessment area by the FPRûs and those described in this THP, operations on this plan should not have significant impact on this species.

Doublet (*Dimeresis howellii*):

Status: CNPS List 2.3

Habitat: is found in xeric areas in Pinyon and juniper woodland, lower montane coniferous forests at elevations from 4400-7800 feet. Annual herb which blooms from May-Sept

Presence within BAA: **Doublet** has not been documented within the BAA, or within the THP area.

Response: The habitat may occur within the operational areas of the THP, but a floral survey did not locate any occurrences. Considering the protection provided within the assessment area by the FPRûs and those described in this THP, operations on this plan should not have significant impact on this species.

English sundew (*Drosera anglica*)

Status: CNPS List 2.3

Habitat: is found in meadows and seeps, and bogs and fens at elevations from 4290-6600 ft. Perennial carnivorous herb which blooms from June- August

Presence within BAA**: English sundew** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet areas) is not found within the operational areas of the THP.

Snake River daisy (*Erigeron disparipilus*):

Status: CNPS List 2.1

Habitat: is found in Great Basin scrub at elevations from 8600--8900 ft. Perennial herb which blooms from Jun-Jul

Presence within BAA: **Snake River daisy** not been documented within the BAA, or within the THP area.

Response: The operational portion of the THP is below the elevational range of this species. This community (Great Basin scrub) is not within the operational areas of the THP

Prostrate buckwheat (*Eriogonum prociduum*):

Status: CNPS List 1B.2

Habitat: is found in volcanic areas in Pinyon and juniper woodland, Upper montane coniferous forest, Great Basin scrub at elevations from 4200-8900 ft. Perennial herb which blooms from May-Aug

Presence within BAA: **Prostrate buckwheat** has not been documented within the BAA, or within the THP area.

Response: This habitat may be found within the operational areas of the THP. Considering the protection provided within the assessment area by the FPRûs and those described in this THP, operations on this plan should not have significant impact on this species.
.

Modoc bedstraw (*Galium glabrescens ssp. modocense*):

Status: CNPS List 1B.2

Habitat: is found in gravelly or rocky talus in Great Basin scrub at elevations from 5000-9300 ft. Perennial herb which blooms from Jun-Aug

Presence within BAA**: Modoc bedstraw** has not been documented within the BAA, or within the THP area.

.

Response: This community (Great Basin Scrub) is not found within the operational areas of the THP.

Boggs Lake hedge-hyssop (*Gratiola heterosepala*):

Status: CNPS List 1B.2

Habitat: is found in marshes and swamps, lake margins, vernal pools at elevations from 30-7800 ft. Annual herb which blooms from Apr-Aug

Presence within BAA**: Boggs Lake hedge-hyssop** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP.

MacDougal's lomatium (*Lomatium foeniculaceum var. macdougalii*):

Status: CNPS List 1 2.2

Habitat: is found in volcanic areas in Great Basin scrub, lower montane coniferous forest, Pinyon and juniper woodland at elevations from 3900-6200 ft. Perennial herb which blooms from Apr-Jul

Presence within BAA**: MacDougal's lomatium** has not been documented within the BAA, or within the THP area.

.

Response: This habitat may be found within the operational areas of the THP. Considering the protection provided within the assessment area by the FPRs and those described in this THP, operations on this plan should not have significant impact on this species.

Henderson's lomatium (*Lomatium hendersonii*):

Status: CNPS List 2.3

Habitat: is found in rocky, clay areas in Great Basin scrub, lower montane coniferous forest, Pinyon and juniper woodland at elevations from 4600-8000 ft. Perennial herb which blooms from Mar-Jun

Presence within BAA**:** **Henderson's lomatium** has not been documented within the BAA, or within the THP area.

Response: This habitat (clay area) is not found within the operational areas of the THP.

Raven's lomatium (*Lomatium ravenii*):

Status: CNPS List 2.3

Habitat: is found in adobe, alkaline areas in the Great Basin scrub at elevations from 3300-9800 ft. Perennial herb which blooms from Apr-Jun

Presence within BAA**:** **Raven's lomatium** has not been documented within the BAA, or within the THP area.

.

Response: This habitat (adobe, alkaline area) is not found within the operational areas of the THP. This community (Great Basin scrub) is not found within the operational areas of the THP.

Adobe lomatium (*Lomatium roseanum*):

Status: CNPS List 1B.2

Habitat: is found in gravelly or rocky openings in Great Basin scrub, lower montane coniferous forest at elevations from 4600-7300 ft. Perennial herb which blooms from Jun-Jul

Presence within BAA**:** **Adobe lomatium** has not been documented within the BAA, or within the THP area.

.

Response: This habitat may be found within the operational areas of the THP. Considering the protection provided within the assessment area by the FPRûs and those described in this THP, operations on this plan should not have significant impact on this species.

Bearded lupine (*Lupinus latifolius var. barbatus*):

Status: CNPS List 1B.2

Habitat: is found in mesic areas in Upper montane coniferous forest at elevations from 4900-8200 ft. Perennial herb which blooms from Jun-Jul

Presence within BAA**: Bearded lupine** has not been documented within the BAA, or within the THP area.

Response: This habitat (mesic area) is not found within the operational areas of the THP.

Lilliput lupine (*Lupinus uncialis*):

Status: CNPS List 2.2

Habitat: is found in volcanic and gravelly areas in the Great Basin scrub, Pinyon and juniper woodland, at elevations from 4200-4600 ft. Annual herb which blooms from May-Jul

Presence within BAA**: Lilliput lupine** has not been documented within the BAA, or within the THP area.
.
Response: These communities (Great Basin scrub, Pinyon and juniper woodland) are not found within the operational areas of the THP.

Toiyabe bluebells (*Mertensia cusickii*):

Status: CNPS List 2.2

Habitat: is found in meadows and seeps in the Great Basin scrub at elevations from 4900-8200 ft. Perennial herb which blooms from Apr-Jul

Presence within BAA**: Toiyabe bluebells** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP.
This community (Great Basin scrub) is not found within the operational areas of the THP

Long bluebells (*Mertensia longiflora*):

Status: CNPS List 2.2

Habitat: is found in open, dry areas under pine / sagebrush in the Great Basin scrub, lower montane coniferous forest at elevations from 5000-7200 ft. Perennial herb which blooms from Apr-Jun

Presence within BAA**: Long bluebells** has not been documented within the BAA, or within the THP area.

Response: The habitat may occur within the operational areas of the THP, but a floral survey did not locate any occurrences. Considering the protection provided within the assessment area by the FPRûs and those described in this THP, operations on this plan should not have significant impact on this species.

Beautiful sagebrush bluebells (*Mertensia oblongifolia var. amoena*):

Status: CNPS List 2.2

Habitat: is found in meadows and seeps in the Great Basin scrub at elevations from 5300-7600 ft. Perennial herb which blooms from Apr-Jul

Presence within BAA**: Beautiful sagebrush bluebells** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP.
This community (Great Basin scrub) is not found within the operational areas of the THP

Sagebrush bluebells (*Mertensia oblongifolia var. oblongifolia*):

Status: CNPS List 2.2

Habitat: is found in meadows and seeps in the Great Basin scrub, lower montane coniferous forest, subalpine coniferous forest at elevations from 3000-10000 ft. Perennial herb which blooms from Apr-Jul

Presence within BAA**: Sagebrush bluebells** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP.

Cusick's monkeyflower (*Mimulus cusickii*):

Status: CNPS List 2.3

Habitat: is found in roadsides, gravelly, scree in the Great Basin scrub, lower montane coniferous forest at elevations from 2000-6000 ft. Annual herb which blooms from May-Aug

Presence within BAA**: Cusick's monkeyflower** has not been documented within the BAA, or within the THP area.

Response: The habitat may occur within the operational areas of the THP, but a floral survey did not locate any occurrences. Considering the protection provided within the assessment area by the FPRûs and those described in this THP, operations on this plan should not have significant impact on this species.

Great Basin nemophila (*Nemophila breviflora*):

Status: CNPS List 2.3

Habitat: is found in meadows and seeps in the Great Basin scrub, upper montane coniferous forest at elevations from 4000-8000 ft. Annual herb which blooms from May-Jul

Presence within BAA**: Great Basin nemophila** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP.

Blunt- fruited sweet-cicely (*Osmorhiza depauperata*):

Status: CNPS List 2.3

Habitat: is found in lower montane coniferous forest, aspen woodlands at elevations from 6000-6100 ft. Perennial herb which blooms from May-Jul

Presence within BAA**: Blunt-fruited sweet-cicely** has not been documented within the BAA, or within the THP area.

Response: The operational portion of the THP is below the elevational range of this species.

Blue alpine phacelia (*Phacelia sericea var. ciliosai*):

Status: CNPS List 2.3

Habitat: is found in rocky areas in the Great Basin scrub, upper montane coniferous forest at elevations from 6900-8800 ft. Perennial herb which blooms from Jun-Aug

Presence within BAA**: Blue alpine phacelia** has not been documented within the BAA, or within the THP area. .

Response: The operational portion of the THP is below the elevational range of this species.

Squarestem phlox (*Phlox muscoide*):

Status: CNPS List 2.3

Habitat: is found in gravelly or rocky, alpine boulder and rock fields in the Great Basin scrub, subalpine coniferous forest at elevations from 4200-8800 ft. Perennial herb which blooms from Jun-Aug

Presence within BAA**: Squarestem phlox** has not been documented within the BAA, or within the THP area. .

Response: This habitat (gravelly or rocky, alpine boulder and rock fields) is not found within the operational areas of the THP.

Slender-leaved pondweed (*Potamogeton filiformis*):

Status: CNPS List 2.2

Habitat: is found in marshes and swamps at elevations from 900-7000 ft. Rhizomatous herb aquatic which blooms from May-Jul

Presence within BAA**: Slender-leaved pondweed** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP.

Eel-grass pondweed (*Potamogeton zosteriformis*):

Status: CNPS List 2.2

Habitat: is found in marshes and swamps at elevations from 6100 ft. Annual herb aquatic which blooms from Jun-Jul

Presence within BAA**: Eel-grass pondweed** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP.
The operational portion of the THP is below the elevational range of this species.

Western black currant (*Ribes hudsonianum var. petiolare*):

Status: CNPS List 2.3

Habitat: is found in Riparian scrub at elevations from 4900-7300 ft. Deciduous scrub which blooms from May-Jul

Presence within BAA**: Western black currant** has not been documented within the BAA, or within the THP area.

Response: This community (Riparian scrub) is not found within the operational areas of the THP.

Bebb's willow (*Salix bebbiana*):

Status: CNPS List 2.3

Habitat: is found in marshes and swamps, streambanks and lake margins in Riparian scrub at elevations from 3900-7300 ft. Deciduous tree which blooms from May

Presence within BAA**: Bebb's willow** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP
This community (Riparian scrub) is not found within the operational areas of the THP.

Fleshy sage (*Salvia dorrii var. incana*):

Status: CNPS List 3

Habitat: is found in Great Basin scrub, Pinyon and juniper woodland at elevations from 1000-4300 ft. Evergreen shrub which blooms from May- Jul

Presence within BAA**: Fleshy sage** has not been documented within the BAA, or within the THP area.

Response: These communities (Great Basin scrub, Pinyon and juniper woodland) are not found within the operational areas of the THP. The operational portion of the THP is above the elevational range of this species.

Tufted saxifrage (*Saxifraga cespitosa*):

Status: CNPS List 2.3

Habitat: is found in meadows and seeps at elevations from 3000-6500 ft. Perennial herb which blooms from Jun-Sep

Presence within BAA**: Tufted saxifrage** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP

Oregon campion (*Silene oregana*):

Status: CNPS List 2.3

Habitat: is found in Great Basin scrub, subalpine coniferous forest at elevations from 4900-8200 ft. Perennial herb which blooms from Jul-Sep

Presence within BAA**: Oregon campion** has not been documented within the BAA, or within the THP area. .

Response: These communities (Great Basin scrub, subalpine coniferous forest) are not found within the operational areas of the THP.

Hairy marsh hedge-nettle (*Stachys palustris ssp. pilosa*):

Status: CNPS List 2.3

Habitat: is found in meadows and seeps in the Great Basin scrub at elevations from 3900-5800 ft. Rhizomatous herb which blooms from Jun-Aug

Presence within BAA**: Hairy marsh hedge-nettle** has been documented within the BAA, but not within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP. This community (Great Basin scrub) is not found within the operational areas of the THP

Woolly stenotus (*Stenotus lanuginosus*):

Status: CNPS List 2.2

Habitat: is found in meadows and seeps in the Great Basin scrub, Pinyon and juniper woodland at elevations from 4900-6300 ft. Perennial herb which blooms from May-Jul

Presence within BAA**: Woolly stenotus** has not been documented within the BAA, or within the THP area.

Response: This habitat (wet area) is not found within the operational areas of the THP. These communities (Great Basin scrub, Pinyon and juniper woodland) are not found within the operational areas of the THP

Kitten-tails (*Synthyris missurica ssp. missurica*):

Status: CNPS List 2.3

Habitat: is found in lower montane coniferous forest, upper montane coniferous forest, subalpine montane coniferous forest at elevations from 6500-8200 ft. Rhizomatous herb which blooms from Jun-Jul

Presence within BAA**: Kitten-tails** has not been documented within the BAA, or within the THP area.

Response: The operational portion of the THP is below the elevational range of this species

Guidelines for plant species discovered within the harvest area:
If any other sensitive plants are identified during harvest operations:

1) The sensitive plants will be flagged, and mapped.
2) A 50-foot zone of no operations will be established around plant occurrences.
3) In consultation with DF&G and CDF, equivalent or more effective protection measures may be developed and amended into the THP.

For these reasons, the RPF believes the potential adverse impacts to plant communities will be minimal.

Recreational Impacts Assessment

Assessment area boundary: The area of the proposed THP plus the area 300 feet outside the THP area.

Rationale: As per CDF guidelines.

Currently there is dispersed, infrequent recreational use of the area. The roads within the THP are used for recreational access, primarily hunting and firewood cutting. This THP will not affect road access. Firewood cutting, hunting, and off-road vehicle use occurs seasonally and often illegally. These activities are all directly related to road access. This is private property, camping on this property is not allowed, private property signs are posted on roads where there are property boundaries.

After operations are complete, most main roads will remain closed, with the exception of USFS road 42N05 that bisects the THP. The RPF anticipates no changes in the type or amount of recreation use.

Visual Impacts Assessment
Assessment area boundary: Within three miles of the THP.
Rationale: As per CDF guidelines.

The locations where significant numbers of people can see the project area are along USFS road 42N05. The conversion area will be visible from the road, but will look similar to other pastureland and meadow in the project vicinity. The RPF anticipates little to no perceptual changes to the landscape within the Selection areas. The conversion will appear more open and meadow like.

With the above information, no significant adverse visual impacts will result from the proposed operations.

Traffic Impacts Assessment
Assessment area boundary: All roads that will be used to haul from the THP to the highway.
Rationale: The roads that will receive traffic from the THP operations.

Products from the project area will be transported over private and public roads. The potential haul route will be from USFS road 42N05, to county road 64, to Highway 395, north to Highway 299, and then to the final destination. As much of the land area is dedicated to forest management, all of the roads being accessed are frequently used for the transportation of forest products. No unusual maintenance of the roads is expected. The transportation of forest products is a regular occurrence, remaining fairly constant the past 10 years.

The RPF foresees no significant adverse impacts with regard to traffic as a result of the proposed THP.

Fuels Assessment
Assessment area boundary: Flournoy ownership within the Watershed Assessment Area.
Rationale: This is the area that the Flournoy Ranch can manage for fuels reduction.

There is an abundant history of wildfire in the assessment area. Reducing the threat of future devastating fires is a very high priority to the Flournoy ownership.

Overall, there will be a reduction in fuel levels and reduced fire hazard potential from the operations. This will reduce the threat of wildfire.

The RPF anticipates no adverse impacts as related to fuels, but rather a net benefit.

Green House Gases Assessment
Assessment area boundary: The THP boundary and operations associated with the THP within the context of local, regional, and global impacts both short and long term.

The selection system as proposed (17acres) will leave trees of all size classes throughout the stand. Trees range in age from seedlings to trees over 100 years old. Approximately 50% of the existing stand will be removed as commercial sawlogs and hog-fuel (biomass). This thinning will allow the residual trees to increase growth and sequester carbon at an accelerated rate.

The remaining (259 acres) will be converted from low site timberland to pastureland. Approximately 75% of the existing stand will be removed as commercial sawlogs and hog-fuel (biomass). The post harvesting stocking will be 25 square feet basal area per acre, averaged over any contiguous 5

acres, with representative trees from different age classes.

After removing the vegetation, the conversion area will be seeded to pasture. This conversion will decrease the potential carbon sequestration from the project area.

Rationale: This is the area that the operations can impact. This analysis evaluates whether climate change and greenhouse gas (GHG) issues related to forest management on this project have the potential to be a significant environmental effect, either on a project basis or cumulatively over a 100-year planning interval. A 100-year outlook is necessary in forest ecosystems where trees can take more than 50 years to reach maturity, and managed forest are entered every 10-50 years for management (harvest) purposes.

1	2	3	4	5	6	7
Current Standing Inventory	CO_2 Stored in Current Standing Timber[1]	Standing Inventory at End of 100-year Planning Interval	CO_2 Stored in Standing Timber at End of 100-year Planning Interval	Total Harvest Over 100-year Planning Interval	Total CO_2 Sequestered in Forest Products at End of 100-year Planning Interval *	Total Net CO_2 Sequestered at End of 100-year Planning Interval (4-2+6)
MBF	**Tons**	**MBF**	**Tons**	**MBF**	**Tons**	**Tons**
2070	16,560	1380	10,040	1557	13164	6644

[1] A conversion factor of 8.0 was used to convert MBF to metric tons of CO_2 including soil root biomass, duff, litter, canopy and no-bole tree parts (Smith et al, 2002, GTR NE-298)
* 1557 (8) = 12456 tons of CO_2 sequestered in forest Products at the end of 100 year planning interval X (23%) = 2865 tons stored off-site in forest products (Harmon et. al**), plus** 1 ton CO_2 per acre stored in grassland 259 (1) =259 tons**,** plus 10040 tons (CO2 stored in standing inventory at the end of the 100- year planning interval on 17 selection acres plus 25 percent of 259 conversion acres. Equals total CO_2 sequestered in forest products at the end of the 100- year planned interval (13164 tons CO_2).
Columns 4-2+6=6644 net metric tons CO_2 sequestered at the end of 100- year planning interval.

Accounting for GHG emissions from harvesting and manufacturing is as follows;

	Project Activity	Quantity	Conversion Factor	GHG Emissions CO2e in metric tons (2204.6 lbs)
1	1. Total tree carbon (bole, roots, bark) 2. Less carbon to mill	• 8,515.5 tonnes of C • (Ave. BA 100 ft. = 42 tonnes C/acre)	1. (8,515.5 tonnes C * 3.67) 2. (31,251.9 tonnes C * 0.675 * 0.463) Sawlogs 3. (31,251.9 tonnes C * .35 * .95) Bio-mass	31,251.9 -9,767.0 <u>-10,391.3</u> 11,093.6
2	**Diesel Fuel Used During Tree Removal**	21,843 gallons of diesel	**10.15 KG/GAL** (21,843 * 10.15 / 1000)	221.7
3	**Diesel Fuel Used in Chipping Operation**	7,602 gallons of diesel	**10.15 KG/GAL** (7,602 * 10.15 / 1000	77.2
4	**Diesel Fuel Used in Site Preparation for Planting**	600 gallons of diesel	**10.15 KG/GAL** (600 * 10.15 / 1000	6.1

5			
	TOTAL Release		11,321.4

The RPF estimates that timberlands stocked at 100 sq. ft. of basal area (BA) per acre contains approximately 42 tonnes (metric ton = 1000 kg = 2204 lbs) of carbon (C) in above and below ground biomass. Following conversion operations, 25 sq. ft. of BA will be retained on the conversion site and 50 sq. ft. of BA on the selection site. The conversion of 259 acres and selection logging of 17 acres of PP/WF/WJ timberland would emit 31,251.9 tonnes of CO2e if it were burned in the open air. Some of the timber will be converted to forest products. Assuming average mill efficiencies (0.675) and long-term product storage values (0.463,) it is estimated that 9,767.0 tonnes of CO2e (carbon dioxide equivalents) will be sequestered in lumber. The tops and sub-merchantable trees will be taken to a wood fired power plant. Approximately 35% of the standing stems are composed of tops and sub-merchantable trees. Burning wood in a power plant reduces emissions by 95 percent. Therefore 10,391.3 CO2e will be sequestered by burning it in a power plant.

In that the timberland is converted to a non-timber growing use, there will be limited capacity for this site to sequester the GHG emitted following completion of conversion operations, as would occur following typical timber harvesting without conversion occurring.

In addition to the tree C that is released, there are emissions associated with energy consumed during project development. This includes diesel fuel used during timber harvesting (221.7 tonnes of CO2e), chipping operation (77.2 tonnes of CO2e) and site development (6.1 tonnes CO2e) resulting in 305.0 tonnes in total project related emissions. Total emissions associated with this project **11,321 tonnes**.

There are several project related factors that minimize the severity of the GHG releases that will occur. In that the conversion area has had its stocking reduced, but not eliminated, there is some capacity for the remaining trees (approximately 25%) to continue growing and sequestering carbon. In addition, there are surrounding timberlands and forest lands that will continue to grow. And not all tree removals will result in immediate CO2e releases; approximately **6,644 tonnes** will remain sequestered in standing inventory for long-term storage. Since the conversion is for the purpose of developing grazing land, much of the annual forage is utilized by grazing animals for meat and dairy production.

The net amount of carbon that would be sequestered under this THP is lower than the amount of carbon that will be released by the management activities; In fact, some negative impacts of net carbon sequestration will likely occur.

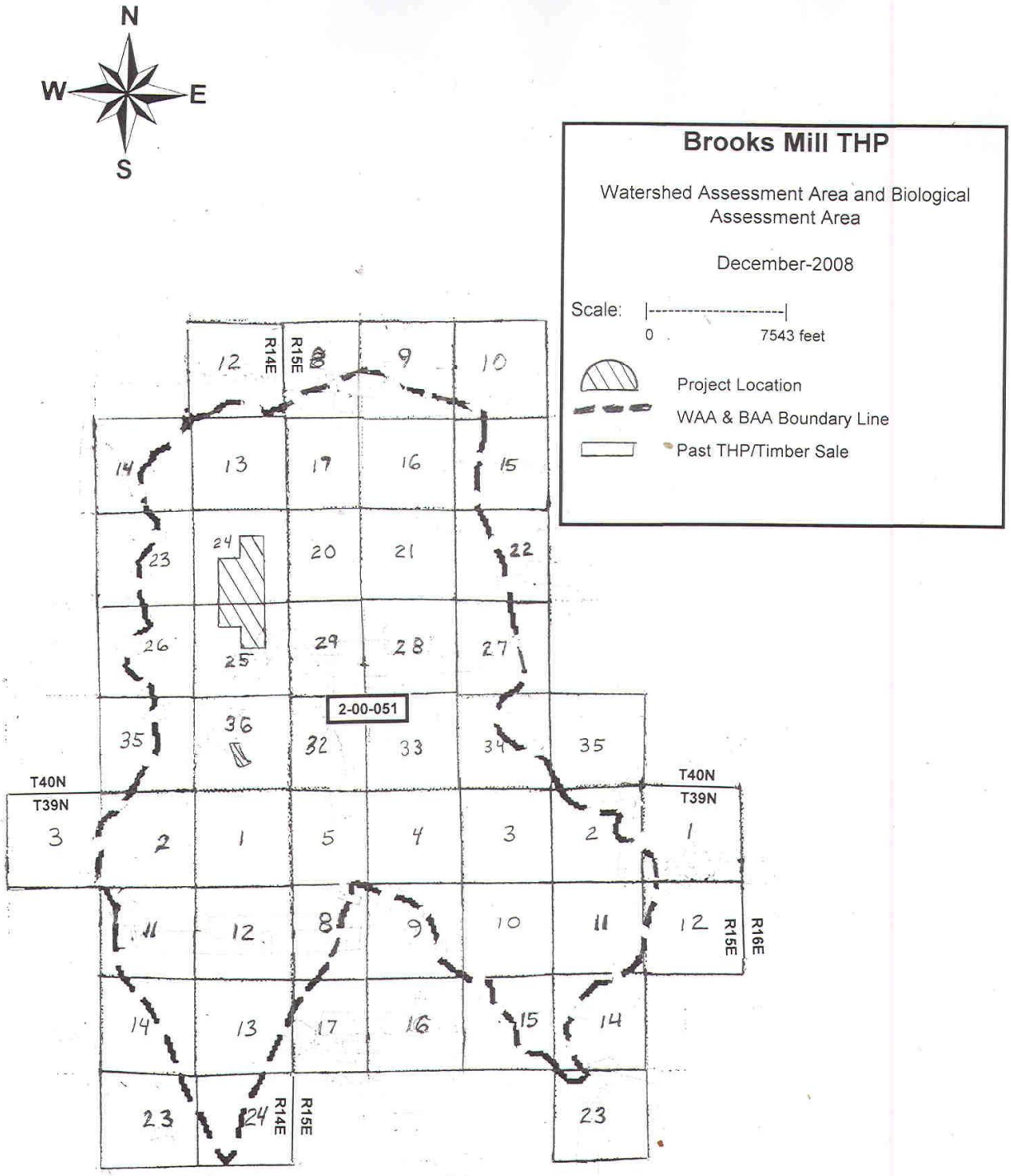
Climate change science is still in its infancy. There are likely wide error bars around the above estimates, given the general level of the analysis and the relatively new estimation equations in the literature. The result from this analysis is that emissions exceed sequestration.

Conclusion

SECTION IV – Cumulative Impacts
(PART OF PLAN)
“Brooks Mill THP”

Given the information and mitigations described in this proposed THP, and the conduct of operations which will take place in accordance with the Forest Practice Rules, the RPF's professional opinion is that **no significant adverse** cumulative impacts will occur in the present or future as a result of operations associated with this proposed project.

SECTION IV – Cumulative Impacts
(PART OF PLAN)
"Brooks Mill THP"



Section V Attachments

January 10, 2009

Mr. William E. Schultz
California Department of Forestry
and Fire Protection
6105 Airport Road
Redding, CA 96002

Re: Brooks Mill THP (Modoc County, Portions of Sections 24, 25, & 36 T40N, R14E,MDBM.

Dear William,

I have notified the timberland owner and the plan submitter as to whom the real party of interest is, whom I am providing professional forestry services, and of any known current or potential conflicts of interest that I have with regard to the timber or land that is subject to operations under the plan.

Should you have any questions, please give me a call.

Sincerely yours,

Michael J. Goodner
RPF #2178

March 9, 2009

Rodney Flournoy
P.O. Box 1
Likely, CA 96116

re: Brooks Mill THP

Dear Mr. Flournoy:

Under California State Law (Title 14 CCR 1035), I am required to notify you of the responsibilities you have as the **plan submitter**. A timber harvest plan (THP) is being prepared for you, by my firm, (in a portion of **Sections 24,25, & 36 T40N, R14E,** in which a complete description of the methods and potential effects of this timber harvest are presented and discussed. Your responsibilities (CCR 1035) include the following:

1- Ensure that a RPF conducts any activities, which require a RPF.
2- Provide the RPF preparing the plan or amendments with complete and correct information regarding pertinent legal rights to, interest in, and responsibilities for land, timber, and access, as these affect the planning and conduct of timber operations.
3- Sign the THP certifying knowledge of the plan contents and the requirements of this section.
4- Within five working days of a change in RPF responsibilities for THP implementation or substitution of another RPF, file with the Director a notice which states the RPFôs name and registration number, address, and subsequent responsibilities for any RPF required field work, amendment preparation, or operation supervision.
5- Provide a copy of the approved THP and any approved operational amendments to the LTO containing the General Information, Plan of Operations, THP Map, Yarding System Map, Erosion Hazard Rating map and any other information deemed by the RPF to be necessary for timber operations.
6- The plan submitter or RPF will notify the Director prior to commencement of site preparation operations.
7- Disclose to the LTO, prior to the start of operations, through an on the ground meeting, the location and protection measures for any archaeological or historical sites requiring protection, if the RPF has submitted written notification to the plan submitter that the plan submitter needs to provide the LTO with this information.

If you have any questions about your responsibilities or specific questions about this THP, please give me a telephone call.

Sincerely,

Michael J. Goodner
RPF #2178

March 9, 2009

Mr. Rodney Flournoy
P.O. Box 1`
Likely, CA 96116

re: Brooks Mill THP

Dear Mr. Flournoy:

Under California State Law, I am required to notify you of the responsibilities you have as the **owner of the timberland and timber**. A timber harvest plan (THP) for your property in portions of Sections: **24, 25, & 36 T40N, R14E,** is being prepared for you, by my firm, in which a complete description of the methods and potential effects of this timber harvest are presented and discussed.

Your responsibilities include the following:

1- You are responsible for the maintenance of erosion control devices that may be constructed to reduce erosion after logging has occurred for a period of one year after operations are completed, or possibly, up to three, if determined by the Director.

2- Responsibility for meeting stocking requirements (including filing stocking reports) contained within the plan.

3- You, as the landowner, are responsible for the location and accurate representation of all property lines as they currently exist on your property. You must warrant that you have the right to harvest the timber on your property.

4- Public Resource Code 4585 establishes that within one month after the completion of the work described in a THP, excluding stocking, a report that all work has been completed will be filed by the timber owner or his agent with the Department of Forestry and Fire Protection.

If you have any questions about your responsibilities or specific questions about this THP, please give me a telephone call.

Sincerely,

Michael J. Goodner
RPF # 2178

LICENSED TIMBER OPERATIOR RESPONSIBLILITY ACKNOWLEDGEMENT

(As per Section 1035.3 Title 14, CCR)

Harvesting Plan Number: _____ **THP Name:** Brooks Mill

Licensed Timber Operator Information

Name: _____

Street Address/PO Box: _____ City: _____ Zip Code: _____

Telephone Number: _____ LTO Number:

_____

As the LTO Listed above I acknowledge responsibility for the following:

1) Inform the responsible RPF or plan submitter orally or in writing of any site conditions which in the LTO's opinion prevent implementation of the approved plan and amendments.
2) Be responsible for the work of his or her employees and familiarize all employees with the intent and details of the operational and protection measures of the plan and amendments that apply to their work.
3) Keep a copy of the applicable approved plan and amendments available for reference at the site of active timber operations.
4) Comply with all provisions of the ACT, Board rules and regulations and the applicable approved plan, and amendments.
5) Attend an on-site meeting or discuss archaeological site protection with the RPF or supervised designee familiar with on-site conditions.
6) To inquire of the plan submitter, timberland owner or their authorized agent, RPF who wrote the plan, or the supervised designee, if any mitigation measures or specific operation instructions are contained in the Confidential Archaeological Addendum or another confidential addendum to the plan.
7) Provide the RPF responsible for professional advice throughout the timber operations, the name, and address and phone number of an on-site contact employee authorized by the LTO to receive RPF advice.
8) Keep the RPF responsible for profession advice throughout the timber operations advised of the status of timber operation activity.
9) Within 5 days before, and not later than the startup of timber operation, notify the RPF of the start of timber operations.
10) Within 5 days before, and not later than the shutdown of a timber operation, the LTO shall notify the RPF of the shutdown of timber operations.
11) Cease operations, except for emergencies and operations needed to protect water quality, upon receipt of written notice of a RPF's withdrawal of professional services from the plan. The LTO shall not resume operations until written notice is received from the plan submitter that another RPF has visited the site and accepts responsibility for providing advice regarding the plan as the RPF of record.

In addition to the above, I have specific responsibilities for the following:

_____

I have read and understand my responsibilities as the Licensed Timber Operator summarized above and specifically described in 14 CCR 1035.3. I will fulfill my legal obligation as stated in the forest practice rules, and agree to fulfill my responsibilities as described above.

LTO Signature: _____

Title: _____

Responsible On-Site Contact (<u>if</u> <u>Different</u>)

Name:_____

Printed Name: _____

Street Address/PO Box #: _____City: _____Zip Code:_____

Telephone Number: _____

Registered Professional Forester (RPF) Responsibility Acknowledgement

(As per Section 1035.1 Title 14, CCR)

Brooks Mill THP (Portions of Sections: 24,25& 36, T40N, R14 MDBM)
RPF to Provide Professional Advice:

Name**: Michael J. Goodner**
Street Address: P.O. Box 38 City: Burney State: CA Zip Code: 96013
Telephone Number: 530-335-5486 RPF Number: 2178

As of January 1, 2001 I have read my responsibility as RPF, as described under 14 CCR 1035.1(a-g). I will fulfill my responsibilities as an RPF as they pertain to this plan.

[X] Yes[ ] No I have been retained as the RPF, available to provide professional advice to the licensed timber operator and timberland owner upon request throughout the active timber operations regarding: (1) the plan, (2) the forest practice rules, (3) and other associated regulations pertaining to timber operations.

RPF Signature: _____

PLAN SUBMITTER RESPONSIBILITY ACKNOWLEDGEMENT

(As per Section 1035 Title 14, CCR)

Plan Submitter

Name: Rodney Flournoy

Street Address PO Box 1 City: Likely State: CA Zip Code: 96116

Telephone Number: 530-233-4777

As of January 1, 2001, I have read and understand my responsibilities as Plan Submitter as described under 14 CCR 1035. I have fulfilled my legal obligation as stated in the forest practice rules, and agree to fulfill my responsibility as the plan submitter as it pertains to this plan.

[X] Yes [ ] No I have retained the services of an RPF to provide professional advice to the LTO and timberland owner upon request throughout active timber operations regarding: (1) the plan, (2) the forest practice rules, (3) and other associated regulations pertaining to timber operations.

[ ] Yes [ ] No I have authorized the timberland owner, _____ to perform the services of a professional forester, understanding that the services will be provided personally on lands owned by the timberland owner.

Plan Submitter Signature: _____

December 18, 2008

Jim Irvin
Modoc National Forest
Warner Mountain Ranger District
PO Box 220
Cedarville, CA 96104

Re: Notification of and request for Information regarding a proposed Timber Harvest Plan

Dear Jim:

Cascade Resource Consultants is preparing a Timber Harvest Plan (THP) to be submitted to the California Department of Forestry and Fire Protection (CDF) in Redding, CA for review and approval. The **Brooks Mill THP** is located approximately 10.3 miles northeast of Likely, California. It is located in portions of sections – **24, 25, & 36 T40N R14E MDBM.** The THP and Cumulative Assessment Area is located on the following 7.5-minute quadrangles; Soup Creek, CA. and Jesse Valley, CA. A watershed – cumulative assessment area/project map has been included for your information. The earliest this plan would be submitted for approval is January 30, 2009.

I sent you a letter in November that did not include an additional 13 acres that have been added to the THP in section 36 T40N R14E MDBM. The assessment area is the same as my November 2008 letter.

The purpose of this letter is to notify you, as an adjacent landowner, of our intentions to harvest timber and to request any information you might have relating to the following:

1- The actual or potential downstream domestic water use within 1,000 feet of the THP boundary.
2- Archaeological sites within or adjacent (500 feet) of the THP area.
3- The presence and general location of any sensitive, rare, plant or animal species found within the cumulative assessment area.
4- Past (10 years) and current harvest operations, and future (5 years) plans to harvest timber or other forest products from your lands within the Cumulative Assessment Area. Information including year, legal description, type of silvicultural treatments, logging system used, and sale

name would be very helpful.

5- Any other special concerns you might have will be considered in the cumulative impact analysis and preparation of the Timber Harvest Plan.

Site-specific information relating to specific locations of arch sites, rare, threatened or endangered plants and/or animals will be treated with the utmost care; and if used in the THP, it will be placed in the confidential sub-section of the THP. As such, it will not be made available to the general public.

You are invited to participate in the timber harvest plan review process by the CDF. To obtain a copy of THP once it is submitted, or to participate in the process, contact the CDF by phone 530-224-2445 or mail at:

California Department of Forestry
and Fire Protection
Attention Dave Loveless
6105 Airport Road
Redding, CA 96002

Should you have any questions, please contact me at P.O. Box 38, Burney, CA 96013, e-mail: crc@citlink.net, or call me at 530-335-5486.

Thank you,

Michael J. Goodner
RPF #2178

PROOF OF PUBLICATION

Modoc County Record
P.O. Box 531
Alturas, CA 96101
(530) 233-2632

State of California
County of Modoc

I am a citizen of the United States and a resident of the county aforesaid; I am over the age of eighteen years; I am not a party to or interested in the notice published.
I am the publisher of the *Modoc County Record*, a newspaper of general circulation, printed and published weekly in the City of Alturas, County of Modoc.
The *Modoc County Record* has been adjudged a newspaper of general circulation by the Superior Court of the County of Modoc, State of California, under the date of July 30, 1958, Case Number 6356.
The notice of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

NOVEMBER 13

All in the year 2008

I certify (or declare) under the penalty of perjury that the following is true and correct:

Dated at Alturas, California, this

16th day of MARCH, 2009

Jean A. Hellenbeck

PUBLIC NOTICE

The Brooks Mill Timber Harvest Plan (THP) of approximately 270 acres, is being prepared, in Modoc County about 10.3 miles north-east of Likely, CA, it is located in portions of sections: 24 & 25 T40N R14E Mount Diablo Baseline and Meridian. This notice is to request information about domestic water supplies from Class 1, 2, & 4 watercourses that receive drainage from the THP area and are within 1,000 feet downstream of the THP boundary. A watercourse that maybe affected is Soup Creek. If you have any information about domestic water supplies from this watercourse or any other in the area of the THP, please contact Michael J. Goodner within 10 days at P.O. Box 38 Burney, CA 96013, 530-335-5486, or e-mail: crc@citlink.net.

Published in the *Modoc County Record* on November 13, 2008.

143

Botanical Survey Report

Brooks Mill THP

Cascade Resource Consultants

prepared by

Martin J. Lenz

August 2009

submitted to Cascade Resource Consultants
21 August 2009

Brooks Mill THP Botanical Survey

August 2009

In March 2009, a survey was initiated at the request of Cascade Resource Consultants for rare, threatened or endangered plants in the areas to be included in a proposed timber harvest plan. The plan was to be in the Soup Creek drainage of southeastern Modoc County, and include parts of sections 24, 25 and 36 of T40N R14E. Elevations range from about 5160 ft to about 5490 ft (1573 – 1674 m). The area is covered on the Soup Creek USGS 7.5′ topographic quadrangle map.
Searches were made of the California Native Plant Society's Inventory of Rare and Endangered Plants of California (v7-09a 1-13-09) (CNPS Inventory), and of the California Department of Fish and Game's (DFG) Natural Diversity Database (CNDDB), covering the following quad map areas, to develop a list of species that were potential issues in the area.

Dorris Reservoir (691B) 4112044
Eagle Peak (690C) 4112032
Emerson Peak (673B) 4112022
Jess Valley (674A) 4112023
Little Juniper Reservoir (691C) 4112034
Shields Creek (691A) 4112043
Soup Creek (691D) 4112033
Tule Mountain (674B) 4112024
Warren Peak (690B) 4112042

The search of the CNPS Inventory yielded the following list of species.

scientific name	common name	family	CNPS list
Alisma gramineum	grass alisma	Alismataceae	2.2
Arabis cobrensis	Masonic rock cress	Brassicaceae	2.3
Arnica fulgens	hillside arnica	Asteraceae	2.2
Atriplex gardneri var. falcata	falcate saltbush	Chenopodiaceae	2.2
Betula glandulosa	dwarf resin birch	Betulaceae	2.2
Botrychium ascendens	upswept moonwort	Ophioglossaceae	2.3
Botrychium crenulatum	scalloped moonwort	Ophioglossaceae	2.2
Botrychium lunaria	common moonwort	Ophioglossaceae	2.3
Botrychium minganense	Mingan moonwort	Ophioglossaceae	2.2
Carex limosa	mud sedge	Cyperaceae	2.2
Carex petasata	Liddon's sedge	Cyperaceae	2.3
Carex vallicola	western valley sedge	Cyperaceae	2.3
Claytonia megarhiza	fell-fields claytonia	Portulacaceae	2.3
Cordylanthus capitatus	Yakima bird's-beak	Scrophulariaceae	2.2
Delphinium stachydeum	spiked larkspur	Ranunculaceae	2.3
Dimeresia howellii	doublet	Asteraceae	2.3
Drosera anglica	English sundew	Droseraceae	2.3
Erigeron disparipilus	Snake River daisy	Asteraceae	2.1
Eriogonum prociduum	prostrate buckwheat	Polygonaceae	1B.2
Galium glabrescens ssp. modocense	Modoc bedstraw	Rubiaceae	1B.2

scientific name	common name	family	CNPS list
Gratiola heterosepala	Boggs Lake hedge-hyssop	Scrophulariaceae	1B.2
Lomatium foeniculaceum var. macdougalii	MacDougal's lomatium	Apiaceae	2.2
Lomatium hendersonii	Henderson's lomatium	Apiaceae	2.3
Lomatium ravenii	Raven's lomatium	Apiaceae	2.3
Lomatium roseanum	adobe lomatium	Apiaceae	1B.2
Lupinus latifolius var. barbatus	bearded lupine	Fabaceae	1B.2
Lupinus uncialis	Lilliput lupine	Fabaceae	2.2
Mertensia cusickii	Toiyabe bluebells	Boraginaceae	2.2
Mertensia longiflora	long bluebells	Boraginaceae	2.2
Mertensia oblongifolia var. amoena	beautiful sagebrush bluebells	Boraginaceae	2.2
Mertensia oblongifolia var. oblongifolia	sagebrush bluebells	Boraginaceae	2.2
Mimulus cusickii	Cusick's monkeyflower	Scrophulariaceae	2.3
Nemophila breviflora	Great Basin nemophila	Hydrophyllaceae	2.3
Osmorhiza depauperata	blunt-fruited sweet-cicely	Apiaceae	2.3
Phacelia sericea var. ciliosa	blue alpine phacelia	Hydrophyllaceae	2.3
Phlox muscoides	squarestem phlox	Polemoniaceae	2.3
Potamogeton filiformis	slender-leaved pondweed	Potamogetonaceae	2.2
Potamogeton zosteriformis	eel-grass pondweed	Potamogetonaceae	2.2
Ribes hudsonianum var. petiolare	western black currant	Grossulariaceae	2.3
Salix bebbiana	Bebb's willow	Salicaceae	2.3
Salvia dorrii var. incana	fleshy sage	Lamiaceae	3
Saxifraga cespitosa	tufted saxifrage	Saxifragaceae	2.3
Silene oregana	Oregon campion	Caryophyllaceae	2.3
Stachys palustris ssp. pilosa	hairy marsh hedge-nettle	Lamiaceae	2.3
Synthyris missurica ssp. missurica	kitten-tails	Scrophulariaceae	2.3

A nine-quad search of CNDDB (3-1-09) based on above quads yielded no additional species.
A search was made of the CNDDB BIOS map covering the area. Only one cnddb plant species was shown as occurring in the THP area, *Stachys palustris ssp. pilosa*. It was shown as a large polygon covering the entire area.

A review of the Web Soil Survey for the THP site showed that all soil types here appear to be derived from basalt, i.e. volcanic, with pH ranging from 6.0 to 7.0, i.e. slightly acidic to neutral (not alkaline).

The following species were removed from further consideration due to the absence of their elevation
range in the plan area.

Botrychium lunaria
Claytonia megarhiza
Cordylanthus capitatus
Erigeron disparipilus
Osmorhiza depauperata
Phacelia sericea var. ciliosa
Salvia dorrii var. incana
Synthyris missurica ssp. missurica

The following species were removed from further consideration due to the absence of their aquatic
habitat in the plan area.

Alisma gramineum
Potamogeton filiformis
Potamogeton zosteriformis

The following species were removed from further consideration due to the absence of their upper montane, subalpine or alpine habitats in the plan area.

Lupinus latifolius var. barbatus
Phlox muscoides
Silene oregana

The following species were removed from further consideration due to the absence of their alkaline soil habitats in the plan area.

Atriplex gardneri var. falcata
Lomatium ravenii

After the first visit to the site, habitats for the following species were able to be eliminated as well.

Drosera anglica
Galium glabrescens ssp. Modocense
Gratiola heterosepala
Arabis cobrensis
Delphinium stachydeum
Eriogonum prociduum
Lupinus uncialis
Mimulus cusickii
Saxifraga cespitosa

These amendments yielded the revised list of target species shown in the following table, for which descriptions, illustrations, and photographs, if available, from the references below and from previous encounters were reviewed to update familiarity. An analysis of blooming period and habitat/plant community type was made and compared with proposed timber harvest areas to determine most probable times and places to search.

Scientific name	Blooming period	Communities	Elevation	CNPS list
Arnica fulgens	May-Jul (Aug)	ÅGreat Basin scrub (GBScr) ÅLower montane coniferous forest (LCFrs) ÅMeadows and seeps (Medws)/mesic	1495 ï 2700 meters	2.2
Betula glandulosa	May-Jun	ÅBogs and fens (BgFns) ÅLower montane coniferous forest (LCFrs) ÅMeadows and seeps (Medws) ÅMarshes and swamps (MshSw) ÅSubalpine coniferous forest (SCFrs)/mesic	1300 - 2300 meters	2.2
Botrychium ascendens	Jul-Aug	ÅLower montane coniferous forest (LCFrs) ÅMeadows and seeps (Medws)/mesic	1500 - 2285 meters	**2.3**
Botrychium crenulatum	Jun-Sep	ÅBogs and fens (BgFns) ÅLower montane coniferous forest (LCFrs) ÅMeadows and seeps (Medws) ÅMarshes and swamps (MshSw)(freshwater) ÅUpper montane coniferous forest (UCFrs)	1268 - 3280 meters	**2.2**

Scientific name	Blooming period	Communities	Elevation	CNPS list
Botrychium minganense	Jul-Sep	ÅBogs and fens (BgFns) ÅLower montane coniferous forest (LCFrs) ÅUpper montane coniferous forest (UCFrs)/mesic	1455 ï 2055 meters	2.2
Carex limosa	Jun-Aug	ÅBogs and fens (BgFns) ÅLower montane coniferous forest (LCFrs) ÅMeadows and seeps (Medws) ÅMarshes and swamps (MshSw) ÅUpper montane coniferous forest (UCFrs)	1200 - 2700 meters	2.2
Carex petasata	May-Jul	ÅBroadleafed upland forest (BUFrs) ÅLower montane coniferous forest (LCFrs) ÅMeadows and seeps (Medws) ÅPinyon and juniper woodland (PJWld)	600 - 3320 meters	2.3
Carex vallicola	Jul-Aug	ÅGreat Basin scrub (GBScr) ÅMeadows and seeps (Medws)/mesic	1525 - 2805 meters	2.3
Dimeresia howellii	May-Sep	ÅLower montane coniferous forest (LCFrs) ÅPinyon and juniper woodland (PJWld)/volcanic, xeric	1340 - 2380 meters	2.3
Lomatium foeniculaceum var. macdougalii	Apr-Jul	ÅChenopod scrub (ChScr) ÅGreat Basin scrub (GBScr) ÅLower montane coniferous forest (LCFrs) ÅPinyon and juniper woodland (PJWld)/volcanic	1200 - 1900 meters	2.2
Lomatium hendersonii	Mar-Jun	ÅGreat Basin scrub (GBScr) ÅLower montane coniferous forest (LCFrs) ÅPinyon and juniper woodland (PJWld)/rocky, clay	1400 - 2440 meters	2.3
Lomatium roseanum	Jun-Jul	ÅGreat Basin scrub (GBScr) ÅLower montane coniferous forest (LCFrs)/openings, gravelly or rocky	1463 - 2255 meters	1B.2
Mertensia cusickii	Jun-Jul	ÅGreat Basin scrub (GBScr) ÅMeadows and seeps (Medws)	1495 - 2500 meters	2.2
Mertensia longiflora	Apr-Jun	ÅGreat Basin scrub (GBScr) ÅLower montane coniferous forest (LCFrs)	1525 - 2200 meters	2.2
Mertensia oblongifolia var. amoena	Apr-Jul	ÅGreat Basin scrub (GBScr) ÅMeadows and seeps (Medws)	1630 - 2315 meters	2.2

Scientific name	Blooming period	Communities	Elevation	CNPS list
Mertensia oblongifolia var. oblongifolia	Apr-Jul	ÅGreat Basin scrub (GBScr) ÅLower montane coniferous forest (LCFrs) ÅMeadows and seeps (Medws) ÅSubalpine coniferous forest (SCFrs)/usually mesic	1000 - 3000 meters	2.2
Nemophila breviflora	May-Jul	ÅGreat Basin scrub (GBScr) ÅMeadows and seeps (Medws) ÅUpper montane coniferous forest (UCFrs)/mesic	1220 - 2410 meters	2.3
Ribes hudsonianum var. petiolare	May-Jul	ÅRiparian scrub (RpScr)	1500 - 2230 meters	2.3
Salix bebbiana	May	ÅMarshes and swamps (MshSw)(stream banks and lake margins) ÅRiparian scrub (RpScr)	1200 - 2230 meters	2.3
Stachys palustris ssp.	Jun-Aug	***pilosa*** ÅGreat Basin scrub (GBScr)(mesic) ÅMeadows and seeps (Medws)	1200 - 1770 meters	2.3

Searches for occurrences of the above species were conducted on foot in a meandering pattern through the areas under consideration on 22 April 2009, 4 June 2009, 24 June 2009, and 16 July 2009. Some individual areas of potential habitat were checked that had been previously located by a study of topographic maps and aerial photographs, or by reference from foresters familiar with the area. The routes followed and areas searched during the course of these surveys are indicated on the attached maps.

The results of this survey are summarized as follows.

None of the species on the above target list were found to be present in the THP area.

The following is a partial list of plant taxa noted in or near this THP area.

Achillea millefolia
Allium sp.
Amelanchier sp.
Anaphalis margaretacea
Arnica cordifolia
Artemisia tridentata
Asclepias cordifolia
Astragalus filipes
Balsamorhiza sagittata
Calystegia occidentalis
Carex nebrascensis
Castilleja miniata ssp. miniata
Ceanothus prostratus
Cercocarpus ledifolius

Clarkia lassenensis
Clarkia rhomboidea
Claytonia perfoliata
Claytonia rubra
Collinsia sp.
Delphinium nuttallianum
Ericameria nauseosa
Hydrophyllum sp.
Iris missouriensis
Juniperus occidentalis
Linum usatitissimum
Lomatium triternatum
Lupinus sp.
Mimulus guttatus
Nemophila heterophylla
Paeonia brownii
Penstemon laetus var. sagittatus
Penstemon rydbergii var. oreocharis
Phlox sp.
Pinus jeffreyi
Poa bulbosa
Populus tremuloides
Potentilla millefolia
Potentilla sp.
Prunus virginiana
Pseudostellaria jamesiana
Ranunculus sp.
Ribes sp. (non-target, nodal spines present)
Rosa sp.
Salix spp. (non-target)
Senecio aronicoides
Sidalcea oregana ssp. oregana
Sisyrhynchium bellum
Stellaria longipes
Triteleia hyacinthina
Veratrum sp.
Veronica americana
Viola purpurea

This survey was conducted and/or supervised by Martin J. Lenz who holds a degree in biology from California State University, Humboldt, with emphasis on botanical studies. He is a member of the California Native Plant Society, the California Botanical Society and the American Bryological and Lichenological Society, and has over 40 years experience in plant identification and photography, including numerous rare plant surveys since 1998.

References and Resources

Baldwin, B.G., Boyd, S., Ertter, B.J., Patterson, R.W., Rosatti, T.J., and Wilken, D.H., eds., Jepson Flora Project, University and Jepson Herbaria, University of California, Berkeley

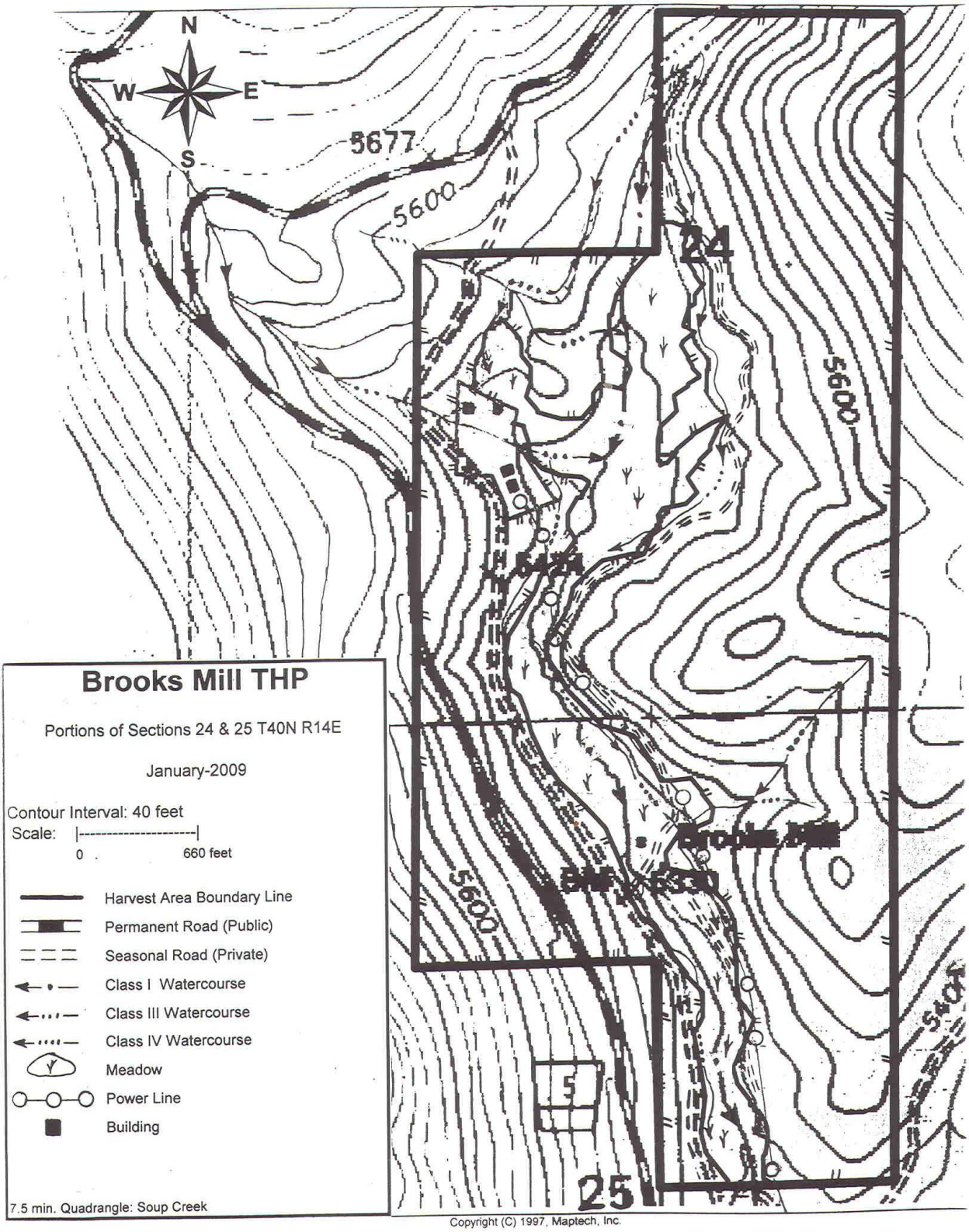
CalPhotos, Digital Library Project, University of California, Berkeley

California Department of Fish and Game, Guidelines For Assessing The Effects Of Proposed Developments On Rare, Threatened, And Endangered Plants And Plant Communities, December 9, 1983, Revised May 8, 2000

California Department of Fish and Game, Natural Diversity Database.

California Department Of Forestry And Fire Protection, Timber Harvesting Plan Form, Instructions And Information, January 2000, "CDF Guidelines For Species Surveys, Avoidance Of Significant Impacts And Identified Mitigations"

California Native Plant Society's Inventory of Rare and Endangered Plants of California,
v7-09a 1-13-09
Farrar, Donald R. "Systematics of moonworts, Botrychium subgenus Botrychium". unpublished. 2006.
Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 7+ vols. New York and Oxford.
Hickman, James G., Ed., The Jepson Manual, Higher Plants of California, 1993, Published by the
University of California Press, 1993
Hitchcock, C.L., and Cronquist, Arthur, Flora of the Pacific Northwest, University of Washington
Press, 1973
Hurd, Emerenciana G., Nancy L. Shaw, Joy Mastrogiuseppe, Lynda C. Smithman, Sherel Goodrich,
"Field Guide to Intermountain Sedges", USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-10, June 1998.
Integrated Taxonomic Information System (ITIS) (http://www.itis.usda.gov).
Munz, Philip A., A California Flora, 1959, and Supplement, 1968, Published by the University of
California Press, Fifth Printing, 1970
Nakamura, Gary, and Nelson, Julie K., Selected Rare Plants of Northern California, University of
California, Division of Agriculture and Natural Resources, 2001
Niehaus, Theodore F., A Field Guide to Pacific States Wildflowers, 1976
Published by Houghton Mifflin Co., Boston, MA., 1976
Oswald, Vernon H., "Selected Plants of Northern California and Adjacent Nevada", Studies From The
Herbarium, California State University, Chico, October 2002
Stuart, John D., and Sawyer, John O., Trees and Shrubs of California, University of California Press,
2001
Texas A&M Bioinformatics Working Group, CyberSedge Project, 1997
USDA, NRCS. Soil Survey Staff. Web Soil Survey. Available online at
http://websoilsurvey.nrcs.usda.gov/.
USDA, NRCS. 2008. The PLANTS Database (http://plants.usda.gov). National Plant Data Center,
Baton Rouge, LA 70874-4490 USA.
Wilson, Barbara L., Richard E. Brainerd, Danna Lytjen, Bruce Newhouse, Nick Otting."Field Guide to the Sedges of the Pacific Northwest". Oregon State University Press. 2008



SECTION III – Support Documentation
(PART OF PLAN)
Brooks Mill THP